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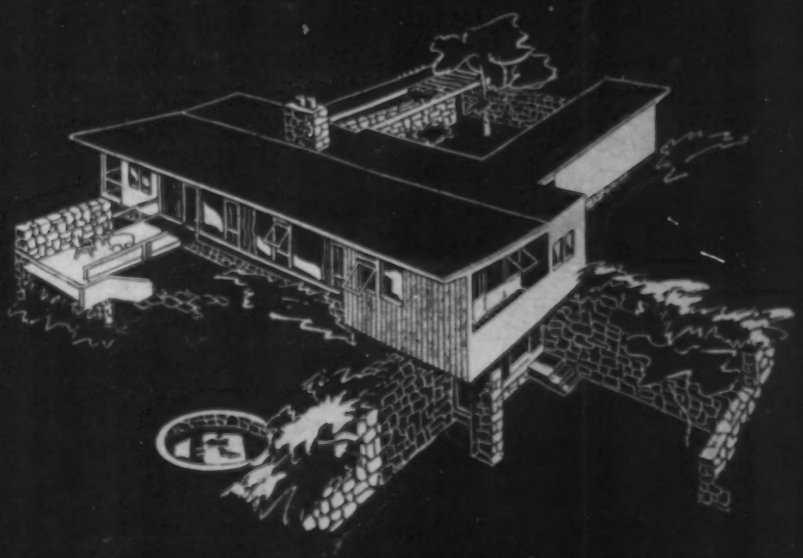
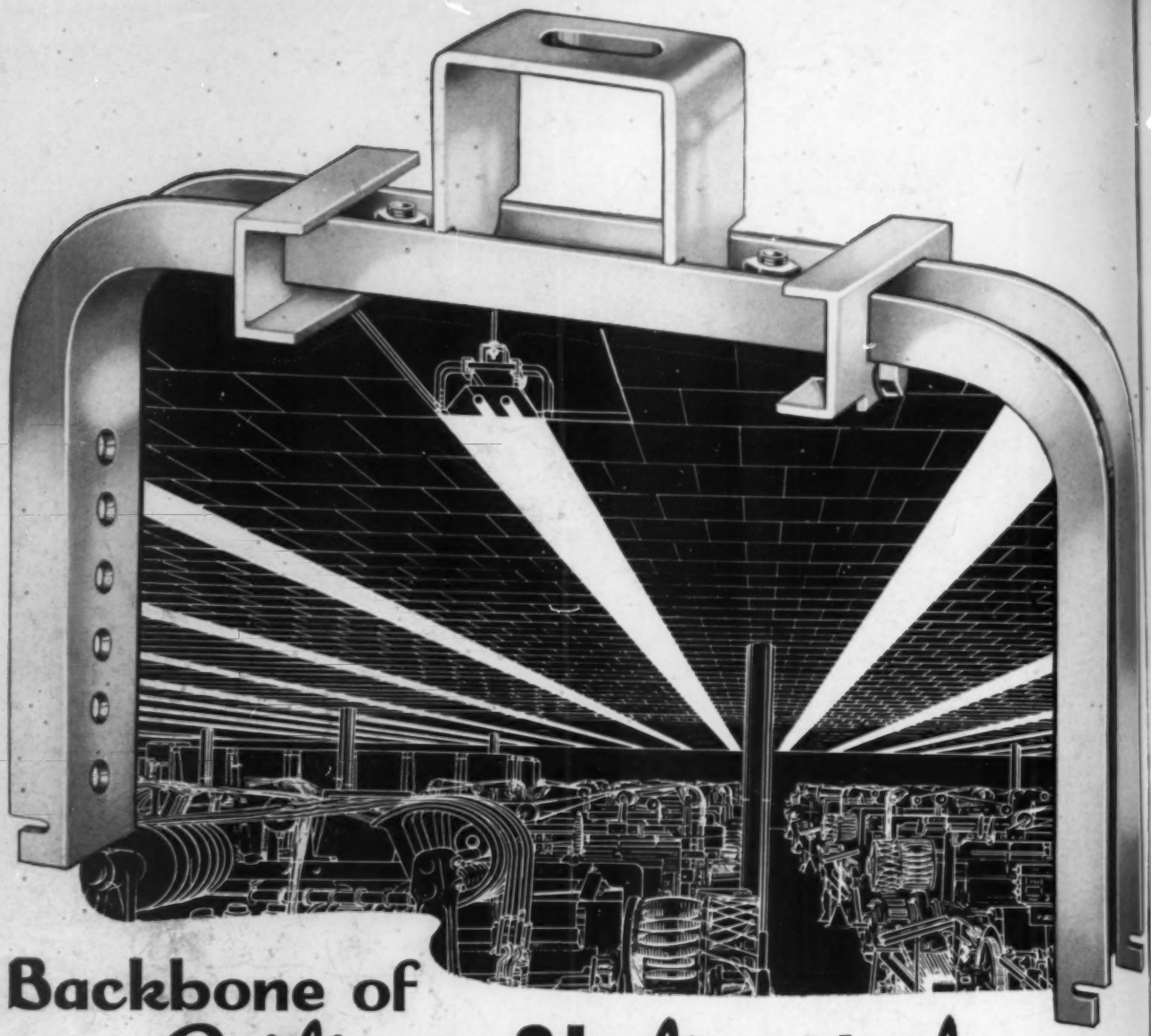


HOUSES · DECEMBER 1945



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When average of ½ gal. saved per flush	292,000 gallons	1,460,000 gallons	2,920,000 gallons
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• Watrous Majestic Flush Valve being adjusted. Simply unscrew cap nut and turn adjusting screw to increase or decrease length of flush.

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THEY PAY FOR THEMSELVES IN THE WATER THEY SAVE

Watrous Flush Valves

THE RECORD REPORTS

Construction Controls Are Likely to Remain • Commerce Department Sums Up Materials Outlook • Storm is Brewing Over Housing • Federal Buildings Will Lead Public Works

CONGRESS has been raising its shoulders mightily in the Washington scene these closing weeks of 1945. At stake is the nation's economy—with the construction industry in an eminent role.

A wrestling match over who shall do what with business and industry during the Reconversion Period has been taking place between the White House and Capitol Hill—with the latter, after many a meek year, rising, colossus-like, to pin the Executive shoulders often to the mat.

President Truman and his Top Reconverter John M. Snyder, for instance, wanted the Executive's wartime powers continued into 1947. Congress was anxious to declare an official end to hostilities and thus set the date to finish off extraordinary powers, many of which by law terminate six months after such a declaration. So the Congress probed carefully into the whole situation, put an OK on some powers, thumbs down on others, generally followed its own whim. Scarce building goods, for one, will stay under controls.

Aids Given Business

Aside from asserting its way on war powers, Congress performed other acrobatics on behalf of peacetime business. In one fell swoop it whacked off $5 billion in taxes, affecting excess profits, corporate levies, excises and individual incomes. This means easier going in 1947. Too, the Congress called back some $52 billion in wartime appropriations. It authorized federal aid for a nation-wide system of airports. It released funds for a road construction program. It began work on a wide range of other items.

The lawmakers weren't taking too readily to other general suggestions of the Administration. They didn't cheer much at the call for universal military training. They hemmed and hawed over the Full Employment Bill, "let the President down" on unemployment compensation for war workers, and took their own sweet time on many another piece of legislation.

Strikes and Prices Eyed

At the administrative end of Washington there was plenty of excitement to keep the spectators busy. Judge Schwellenbach, the new Labor Secretary, faced with crippling reconversion strikes, developed a labor-management conference on which hung high hopes. The new Civilian Production Administration, hatched to succeed the War Production Board, churned away at its hang-over chores at the right hand of over-burdened John M. Snyder. Chester Bowles fought manfully for ceiling prices on houses while Snyder fully accepted only the controlling of prices of building materials.

Official indications are that, although Mr. Bowles doesn't get all he asks for, numerous controls will remain effective in construction. Congress appears reluctant to vote price ceilings on homes, but prices of building materials will stay under watch; so will rents.

Priorities Will Remain

Allocation and priority powers will remain. A check will be kept on inventories. Lumber, for instance, went under inventory control about November 1, with stocks limited to 60 days' requirements; this inventory restriction included the construction and transportation industries.

Note the words of John D. Small, of the Civilian Production Administration, who says:

"The rate at which construction can be speeded up depend in large measure on achieving increased supplies of such materials as bricks, structural clay tile, clay sewer pipe, cast iron soil pipe, and lumber . . . . manpower is the main problem . . . speedier delivery of equipment can substantially improve the production picture . . . .

"Our primary aim in handling bottleneck items is to obtain the most rapid possible increase in their output . . . ."

In this general subject of controls, it should be noted that OPA recently sanctioned a 10 per cent boost in ceiling prices for low and medium-priced hardware items essential in low-cost residential construction. The aim, says the price agency, is to stimulate production of these items.

Materials Outlook Summed Up

The general outlook on building materials is summed up by various Washington sources, eminently the Commerce Department and the last-minute findings of the WPB. Warns the Commerce Department: If lumber, brick, clay sewer pipe and cast iron soil pipe are not more abundant by spring, new construction will be faced with costly delays or, alternatively, will adopt the techniques and substitute materials of the war years. The Department counts on the increased market stimulating producers during the winter lull in construction to restock bare shelves and yards of distributors and make ready for the $6.5 billion program for 1946, including $2 billion in new housing.

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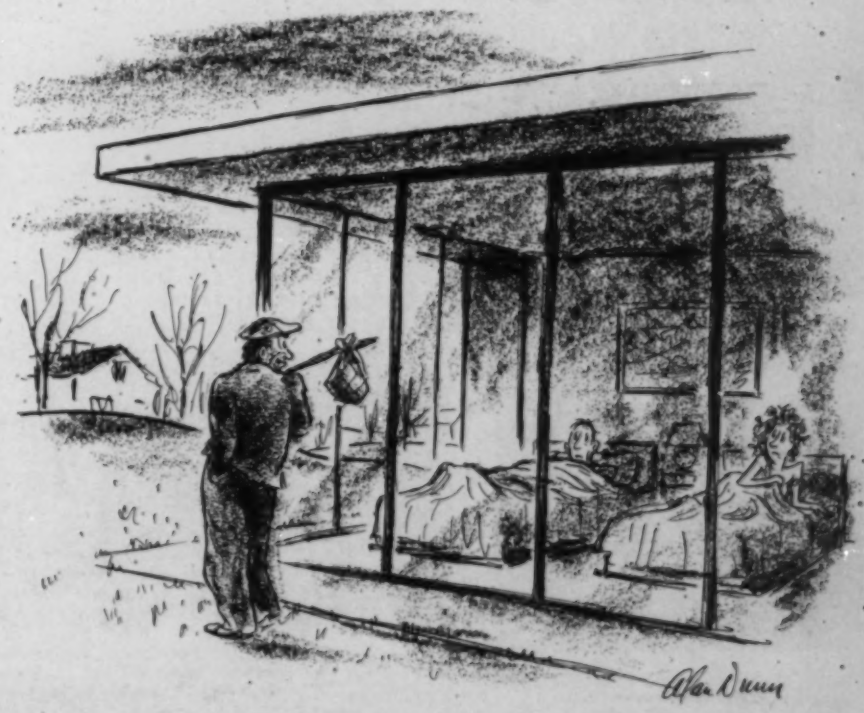
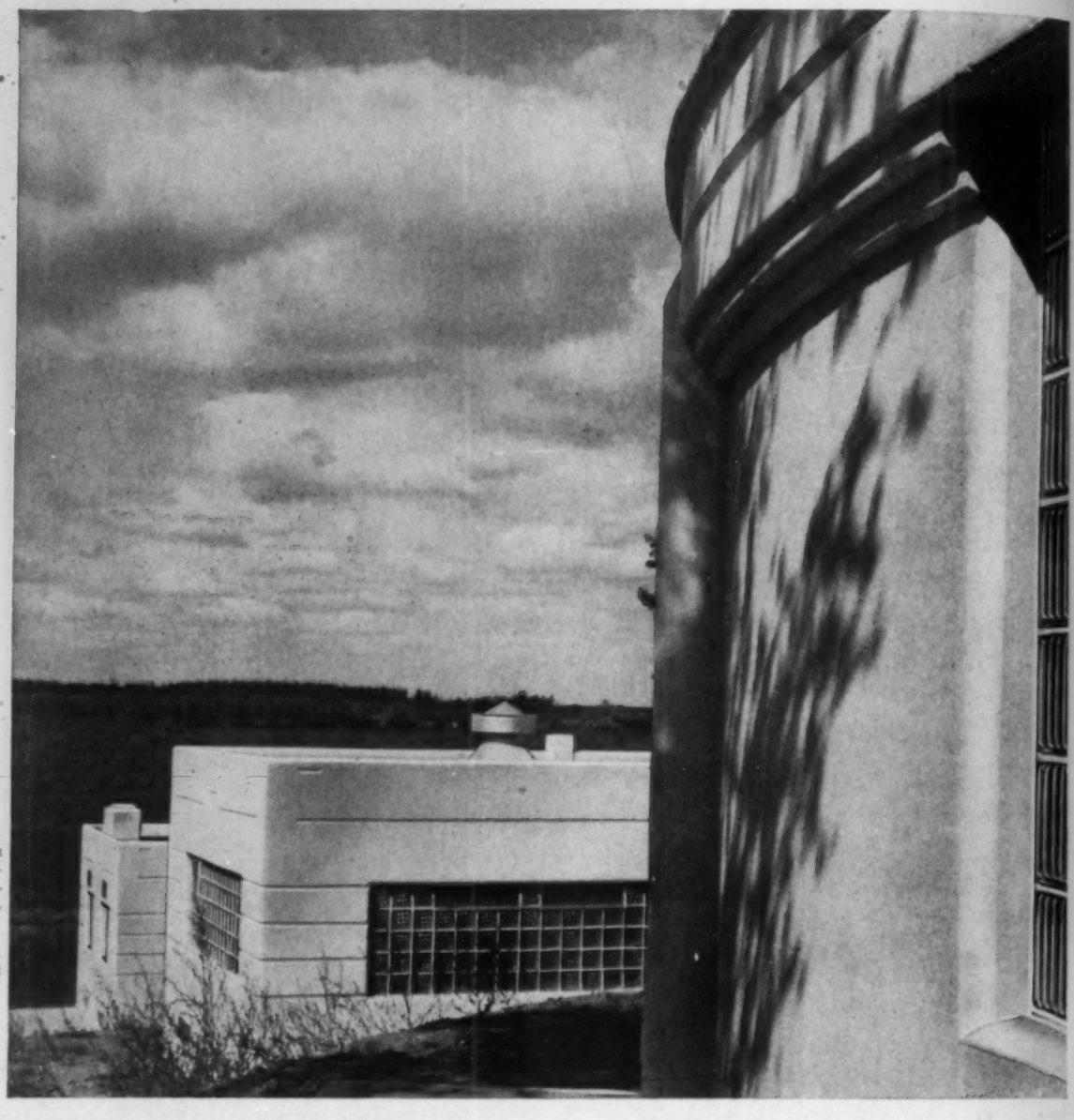


—Drawn for the RECORD by Alan Dunn



New Sewage Treatment Plant at Bagley, Minnesota. Engineers—Druar & Milinowski, St. Paul, Minn.

Photographs—Courtesy—the Portland Cement Association.

Panels of Insulux transmit and diffuse light better than ordinary windows yet provide privacy along with light.

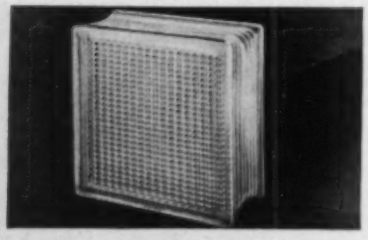
Panels of Insulux do not rot, rust or corrode. And they never need painting.

LIGHT ON MUNICIPAL PROBLEMS

MANY municipal buildings of the future will display lustrous, light-flooded panels of Insulux Glass Block.

And—rightly so!

Insulux is a *practical* as well as a *beautiful* building material. It has many functional uses.



Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do certain things that other building materials cannot do. Investigate!

Take this sewage treatment plant for example. These panels of Insulux bring in an abundance of softly-diffused natural daylight. They provide privacy. They reduce heat loss and condensation.

But—best of all—they reduce maintenance charges. They need little attention other than occasional cleaning. Painting is never required.

OWENS-ILLINOIS

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GLASS BLOCK

For technical data, specifications, and installation details, see our section in Sweet's Architectural Catalog, or write: Insulux Products Division, Dept. B-38, Owens-Illinois Glass Company, Toledo 1, Ohio.

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CAN HELP YOU MODERNIZE *Electrically*

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Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

 (Continued from page 7)

This $6.5 billion estimate covers military and industrial construction, housing, public works, and road building, but not repairs and reconstruction work (which, some think, may reach $4 billion or more). Production is expected to exceed 1945 by quarters as follows: January-March, by one-fifth; April-June, by nearly half; July-September, by 60 per cent; October-December, a slight drop.

Came the word from WPB (among its last) that no appreciable replenishment of lumber stocks should be counted on by the end of the year. It forecast that cast iron soil pipe output would not reach 1939 totals even by next June and that cast iron radiators will be similarly low.

Two pertinent facts come to light from these agencies. One is that the field of alterations and repairs is most likely to gain most from relaxation of controls. The other is that lumber exports will be kept under close scrutiny "to prevent interference with revival of domestic home and commercial building." However, such exports will be held to a minimum, not cut off altogether.

Storm Brewing over Housing

Washington officialdom, particularly Congress, reacts much less excitedly to basic material shortages than to the potential storm cloud of an increasing housing shortage. Returning veterans, anxious to make homes of their own, find themselves having to "hole up" with their families, and disgruntled veterans bear a lot of weight with Congressmen who come up for election next year.

This is the danger signal the worried legislators see through the eyes of the National Housing Agency, the Office of Price Administration, and other agencies: the need for houses will be acute for the next two years in major cities, including New York, Washington, Chicago and San Francisco.

One NHA study shows that in 1946 nearly 3.5 million families will seek homes, and of these almost 3 million will be veterans. Only 1.5 million of these families will find places to live.

It anticipates that, in addition to the heavy "doubling up" of families now, roughly 2 million more will have to double up with relatives in the course of the next 12 months.

No solution, but rather a continued pressure for houses, is expected for the next year or two.

NHA received a sizable amount of good will in Congress by its quick action in curtailing wartime activities when Japan surrendered. "This agency," said the House Appropriations Committee, a watchdog of federal expenditures, "to the credit of its Administrator, was among the first to curtail activities and reduce expenditures . . . As a consequence, rescissions (savings) aggregating $77,727,000 . . . are proposed."

Seven of the nine members of the jury of awards in the Chicago Tribune's *$24,000 Chicagoland prize home competition (see AR, Nov., p. 156). Left to right, standing: John Merrill, architect; Arthur E. Fossier, builder; Boyd Hill, architect and professional adviser in the contest; A. N. Rebori, architect. Seated: Philip B. Maher, architect; John R. O'Connor, builder; Irvin A. Blietz, builder; and Paul Gerhardt, Jr., architect. Missing jurors: J. E. Merrion, builder, and John W. Park, architect*

Plans Made for Veterans

Not long after this President Truman sent a request to Congress for $24.5 million to enable NHA to provide housing for veterans. The Budget Bureau explained that, under the proposal, "surplus temporary war housing will be panelized and made available to cities having a problem of housing veterans during the emergency period when permanent housing cannot be provided." Need is anticipated particularly in college and university cities.

Scheduled to open early this month is a Federal Public Housing Authority exposition on "war housing re-use" near Silver Spring, Maryland, a Washington suburb. Various types of structure are being demonstrated by FPHA, all reconstructed from panels into which emergency war houses were sawed.

Federal Buildings Will Lead

Apparently one of the first public works items to get attention after private construction is well under way will be federal buildings. Federal Works Administrator Philip B. Fleming stresses the fact that, except for temporary office buildings, no public building construction has been undertaken for nearly five years.

"The accumulated need for structures of all sorts for the proper conduct of the government's business is very great," he has advised the Congress. "While the eligible projects comprise a long list, it is intended to build at first only those most urgently needed. We are most anxious to avoid competition with private construction for labor and materials."

General Fleming notes that the larger number of the eligible projects are relatively small and well suited to smaller contractors.

Classifying Surplus Real Estate

Real estate holdings acquired by the federal government from coast to coast during the war raise a problem as they move into the surplus category. The Surplus Property Administrator, W. Stuart Symington, has announced a basis for classifying such real estate so as to fit it into the needs of the local communities where it is situated. The plan solicits the aid of real estate boards, planning commissions, chambers of commerce, and municipal officers, whose suggestions will be used in determining the proper classification, whether for park, reservoir, utility, commercial, industrial or residential use. More than 6,000,000 acres are owned outright by the federal government and a large majority will be disposed of.

(Continued on page 13)

THE RECORD REPORTS

(Continued from page 10)

Hospital Survey Recommended

Congress is moving along slowly on the Hospital Survey and Construction Bill. As the Senate Committee finished its study, it recommended passage of a measure which would assist the states in making a survey of needs and in providing funds for construction. It proposed $5,000,000 for surveys and planning and $75,000,000 a year for five years, 1947-51, for construction.

The committee report to the Senate discusses the need for five types of construction—general hospitals, tuberculosis hospitals, hospitals for nervous and mental illness, health centers, and chronic disease hospitals.

It advised that the need is acute and accentuated by many factors. "Without modern hospitals, laboratories and health centers, properly distributed in relation to need," it reported pointedly, "adequate health care cannot be achieved under any method."

Construction Council Meets

The recently organized Construction Industry Advisory Council of the National Chamber of Commerce had its first meeting on Nov. 1 Problems facing the building industry in bringing about a prompt and non-inflationary revival of large-scale activity were discussed.

Speaking before the representatives of more than 80 professional and trade organizations attending the meeting, W. O. Shreve, vice president of the General Electric Co. and a National Chamber director, set the keynote by pointing out the purpose of the Council—to provide a means for the many organizations in the industry to get together for the exchange of ideas and suggestions with respect to their common interests.

One of the most timely of the addresses, in view of the labor unrest sweeping the country, was that of Richard J. Gray, acting chairman of the Executive Council of the American Federation of Labor's Building and Construction Trades Department. Sharp up and down swings of construction volume, both seasonal and over the years, Mr. Gray said, account for many of the strains between labor and management. "Most of our troubles will be cured, and costs reduced," he said, "if we can find acceptable ways and means of lengthening the work year, and of ridding the economy of the depressions which construction goes through every few years."

As to the supply of construction workers, Mr. Gray predicted that as soon as those now in the service are back in their communities, the number will be ample to take care of all construction work which can be contracted.

✦ ✦ ✦

WHAT THEY SAY . . .

About the Murray Bill

"The proposal by Senator Murray to time public works construction in such a way as to stabilize the total volume of building and to create a $5 billion reserve of planned projects should receive early and favorable consideration by Congress." *J. Ernest Fender, president, Structural Clay Products Institute.*

"Careful timing and scheduling of public works, for which the Murray bill provides, will do much to stabilize the construction industry and to eliminate extreme fluctuations in employment for workers in the building trades." *L. C. Hart, president, The Producers' Council, Inc.*

About OPA's Price Ceilings

"The plan for controlling prices of new housing, as proposed by OPA Administer Chester Bowles, would reduce the number of new homes built by 75 per cent so long as any plan remained in force. . . . Because of uncertainty as to the cost of building materials and equipment and as to the productivity of labor, very few builders will be able to initiate housing projects if required to abide by estimates made at the time the job is started." *Frank W. Cortright, executive vice president, National Assn. of Home Builders of the U. S.*

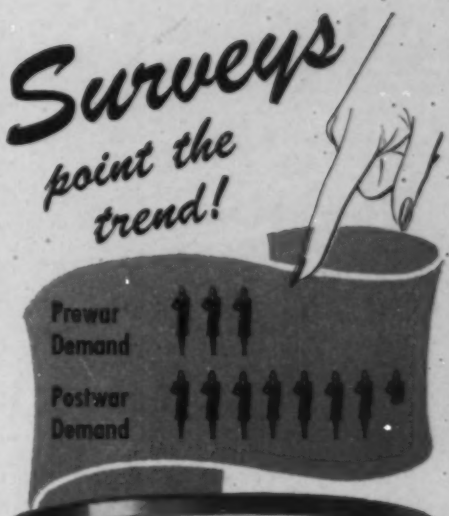
"Where would the OPA, or any other government agency, find enough competent individuals to control individual ceiling prices for even a half million homes? Think of the careful, painstaking study that would have to be devoted to each individual set of plans before a fair and equitable price could be set!" *Douglas Whitlock, speaking in behalf of both the Chamber of Commerce of the U. S. and the Producers' Council.*

WAR HOUSING LEASES MAY BE TERMINATED

Owners of private properties leased to the government for conversion to war housing may negotiate with the Federal Public Housing Authority for early termination of their leases, FPHA Commissioner Philip M. Klutznick has announced.

"Since converted war housing, consisting of almost 50,000 dwelling units, is no longer restricted to war workers,"

(Continued on page 134)



The Trend is to *Electric* WATER HEATERS

In the 6 prewar years, sales of Electric Water Heaters almost tripled. And a 1943 contest conducted by McCall's Magazine shows that 2.4 times as many women wanted Electric Water Heaters as now have them. They're "the coming thing," because they're:

SAFE—Flameless, fumeless

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ADAPTABLE—Permit short hot water lines—Require no flue or vent.

TROUBLE-FREE as electric light!

Installing Electric Water Heaters in every house you build, means giving women what they want!

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A House Wired For An Electric Range Is Already Wired For An

Electric WATER HEATER!

HOSPITAL PLANNING?

The fifth in a series of six advertisements prepared to help you plan effective communications for new or modernized hospitals.

HOW CONNECTACALL SAVES TIME...SAVES FOOTWORK

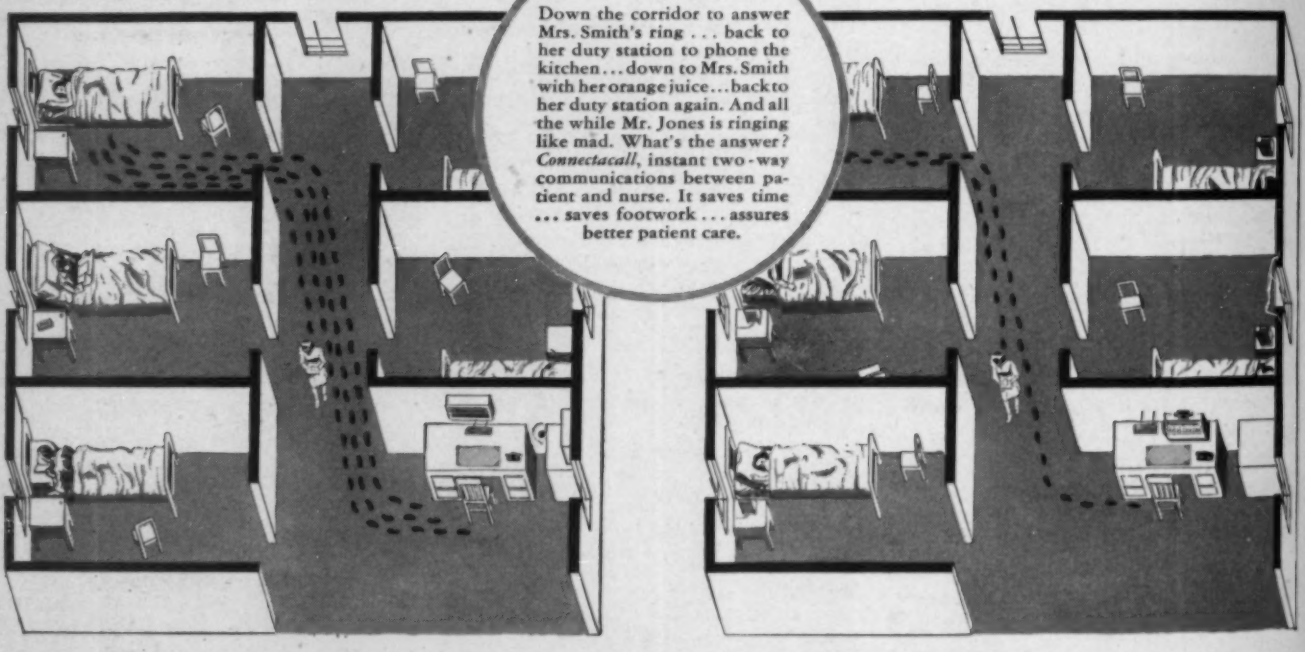
Instant two-way *voice* contact between patient and nurse. In a word that's what Connectacall offers the new or modernized hospital you may be planning. It permits the nurse to spend *more* time at her duty station . . . *less* time trudging endlessly back and forth on routine errands. Connectacall saves time . . . saves footsteps...conserves energy. That means better patient care . . . with fewer nurses.

Connectacall offers the additional advantage of *Silent Supervision* at night. At her duty station the night nurse merely presses a button to connect with a sensitive microphone-speaker at the patient's bedside. Within a matter of minutes, she can make her night rounds by "tuning in" one room after another. And by simply turning up the *volume control,* she can instantly detect the slightest sound of labored breathing or other distress.

Net result: Connectacall provides greater hospital efficiency . . . at reduced nursing payrolls. For technical data on the complete line of "Connecticut" signalling systems, write for your copy of Bulletin 102. Better yet, take advantage of the free consultation service offered by our staff of experienced field engineers. Address Great American Industries, Inc., Connecticut Telephone & Electric Division, 420 Britannia Street, Meriden, Conn.

CONVENTIONAL WAY

CONNECTACALL WAY



Down the corridor to answer Mrs. Smith's ring . . . back to her duty station to phone the kitchen . . . down to Mrs. Smith with her orange juice . . . back to her duty station again. And all the while Mr. Jones is ringing like mad. What's the answer? *Connectacall,* instant two-way communications between patient and nurse. It saves time . . . saves footwork . . . assures better patient care.

CONNECTACALL

product of

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NURSES' CALL SYSTEMS • DOCTORS' SILENT AND AUDIBLE PAGING • DOCTORS' REGISTRY • INTERIOR TELEPHONE SYSTEMS • NIGHT LIGHTS • NURSES' HOME TELEPHONE AND RETURN CALL SYSTEMS

...no job for an amateur

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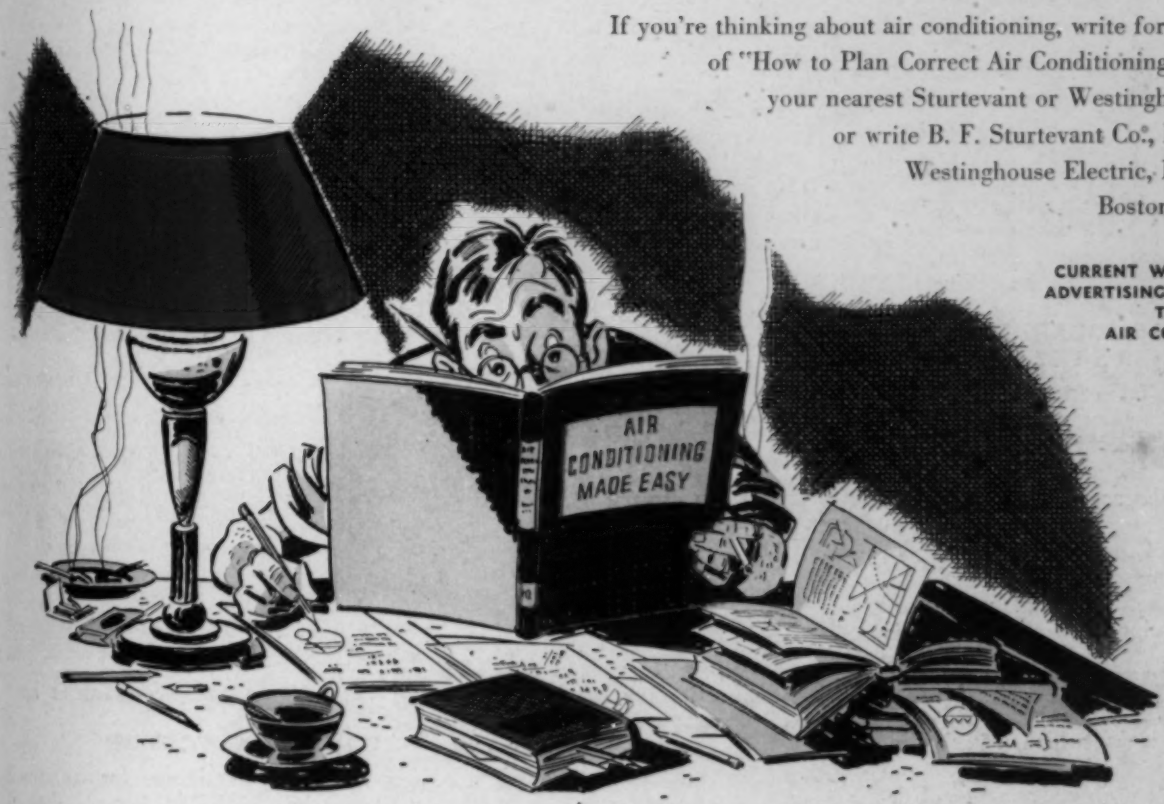
If you're thinking about air conditioning, write for your copy of "How to Plan Correct Air Conditioning." Address your nearest Sturtevant or Westinghouse office or write B. F. Sturtevant Co., Division of Westinghouse Electric, Hyde Park, Boston 36, Mass.

CURRENT WESTINGHOUSE ADVERTISING IS DESIGNED TO SELL YOUR AIR CONDITIONING KNOW-HOW



The Heart of Correct Air Conditioning

WESTINGHOUSE HERMETICALLY-SEALED COMPRESSOR

The entire mechanism of the Westinghouse Hermetically-Sealed Compressor—including its motor—is sealed gas-tight. This feature means sealed-in *power and* sealed-out *trouble . . . has been* service-proved *in thousands of Westinghouse installations. Compact and lightweight for easy installation. Low operating costs.*

Westinghouse presents John Charles Thomas — Sunday, 2:30 E.W.T., N.B.C. Tune in Ted Malone, Monday through Friday, 11:45 A.M., E.W.T., Blue Network.

Westinghouse PLANTS IN 25 CITIES OFFICES EVERYWHERE *CORRECT* **Air Conditioning**

FOR BETTER BUILDING

Flexible design for a service station

SERVICE STATION

Commissioned by Allegheny Ludlum Steel Corp. to design an automotive service station looking toward expected competitive developments in that field, George Cooper Rudolph, New York industrial designer, has come up with the *Moto-Serv*. Features: eligibility for mass prefabrication; ease of installation; high flexibility and ready expansion; easy upkeep.

The basic design of the Moto-Serv consists of an office and storeroom cubicle and a single island-and-canopy unit with two stainless steel tubular supports footed in stainless castings.

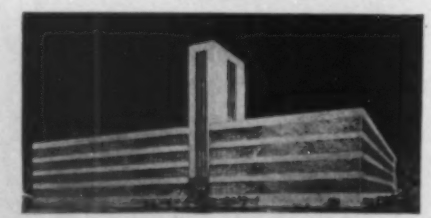
FIBERGLAS SOUNDPROOFING HELPS POLICE RADIO

Improved radio transmission from the radio operations room at the Newark, Ohio, police headquarters has resulted from the installation of inch-thick Fiberglas acoustical board on the walls and ceiling of the room and in other parts of the building. The room is used to maintain two-way radio communication between headquarters and the radio-equipped patrol cars.

AIR CONDITIONED PRINTING PLANT

Air conditioning which controls temperatures to within one degree and humidity to within one per cent of desired levels is being installed in a new $1,900,000 printing plant now under construction for the Newman-Rudolph Lithographing Company in Chicago. It is expected to result in faster and less costly printing on paper that is more thoroughly seasoned and thus of better quality.

The building, designed by R. N. Friedman, of Alschular and Friedman, Architects, will have a brick exterior with granite and Indiana limestone trim. Construction will be steel and concrete, with a floor load of 250 lb. per sq. ft. Four stories in height, the plant will cover 53,500 sq. ft., will be ready for occupancy about the first of next May.



Air conditioned for speedier printing

HOUSE "CORE"

A new home-building unit engineered for assembly-line production is an enclosed central core containing household heating, hot water, plumbing, electricity and meters. Attached to three sides are a complete kitchen, laundry and bathroom, with floor areas, walls, windows and doors placed according to individual house plans. The unit is said to be adaptable to both conventionally-built and prefabricated houses ranging in price from $3,000 to $10,000.

The enclosed core has service access through panels, is equipped with forced warm air furnace—gas or oil; hot water heater—gas or electric; all plumbing, vents and stacks; chimney connections; electrical connections. Kitchen equipment includes refrigerator, cabinets, gas or electric range and sink; an electric washer is provided in the laundry. Ingersoll Division, Borg-Warner Corp., Kalamazoo, Mich.

NAILABLE STEEL

Nailable steel for framing in residential and light industrial construction is now available, it has been announced. Consisting of grooved framing sections, this is the framing which is a basic part of Quonset huts. The groove permits the driving of nails into the metal framework. Stran-Steel Division, Great Lakes Steel Corp., Penobscot Bldg., Detroit 26, Mich.

THEATER CONSTRUCTION EQUIPMENT

Anticipating a widespread development in drive-in theater construction following the lifting of wartime restrictions on building materials, equipment and gasoline, the Theater Equipment Section of RCA Victor has announced plans to supply a complete line of sound and projection equipment designed to meet the special requirements of this type of theater.

The line will include new types of in-car speakers, combined terminal-box and speaker-receptacle units, and self-adjusting amplifier systems. The in-car speakers are said to be 100 per cent weatherproof, so that they can be permanently located at parking spaces on the ramps, within reach of patrons from their car windows. They are specially designed to be acoustically correct for in-car operation; a volume control on the front of the speaker permits the patron to adjust the sound level to his own satisfaction. Radio Corp. of America, RCA Victor Division, Camden, N. J.

REFLECTIVE INSULATION

A low-cost insulation material just announced, *Sisalation*, is composed of specially-treated asphalt, fiber reinforcement, and aluminum-coated Kraft paper. It is said to reflect heat and cold very much as a mirror reflects light, keeping the heat in and the cold out in winter, and reversing the process in summer. It also prevents moisture-vapor within the home passing into the sidewalls and condensing, it is claimed, and prevents infiltration of dust and dirt through walls, around windows and doors. The Sisalkraft Co., 205 W. Wacker Drive, Chicago.

Portable washer for apartment use

PORTABLE WASHER

Especially designed for apartment use, the *1900 Whirlpool Portable Washer* will hold 2 lb. of clothing, has a 2½ gal. water capacity, rinses as well as washes. Its small size—13 in. in diameter and 20 in. in height—permits easy storage when not in use. Nineteen Hundred Corp., St. Joseph, Mich.

PREFAB HOUSE

National distribution through lumber dealers is planned for a two-story prefabricated house called *HomeOla*, built of plywood with a steel "chassis." All wall and floor panels are of plywood stressed-skin construction with the panels glued to both sides of light wood framing members. Floor sections are in 4-ft. squares and have special wearing surfaces of vertical grain fir. Wall panels are 4 by 8 ft.

(Continued on page 22)

THERE'S A DEGREE OF *Electrical Living* FOR EVERY HOME

Here's an ELECTRICAL LIVING Kitchen for the "BUDGET" Home

There is a degree of Electrical Living for every price class of home . . . "Thrift", "Budget", "Ideal" and "De luxe".

For a "Budget" home, this smart kitchen design incorporates essential electrical features (range, refrigerator and dishwasher) together with expertly-planned work centers, modern lighting, electrical outlets placed for maximum convenience, and progressive lighting switches. Designs for kitchens with the other degrees of Electrical Living are available.

The Westinghouse Home Wiring Handbook will help you plan and specify an efficient wiring system for Electrical Living for the entire home. This Handbook is helping thousands of architects and builders to select the proper degree of Electrical Living and to provide necessary wiring facilities. The book has 120 pages, dozens of charts, diagrams and tables, suggested specifications, etc. Costs only $1.00. Send for your copy to Westinghouse Electric Corporation, Industrial Relations Dept., 306 Fourth Avenue, Pittsburgh 30, Pa.

J-91534

★ ★ ★

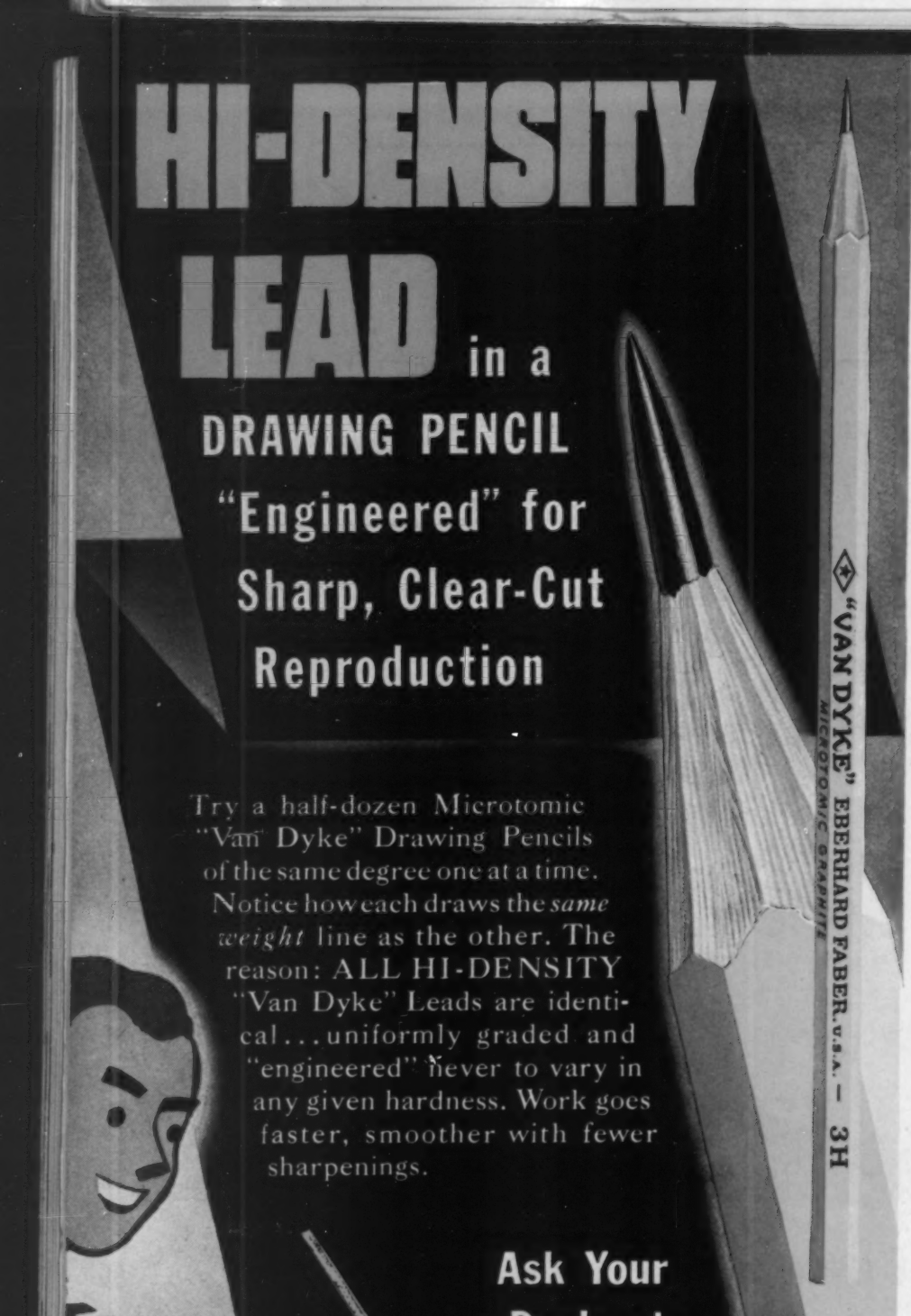
Better Homes Department, in addition to its consulting service, offers you the following FREE books: Electrical Living in 194X—Professional Edition; Manual of Better Home Wiring; and Better Living Means Electrical Living.

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Better Homes Department

HI-DENSITY LEAD in a DRAWING PENCIL "Engineered" for Sharp, Clear-Cut Reproduction

Try a half-dozen Microtomic "Van Dyke" Drawing Pencils of the same degree one at a time. Notice how each draws the *same weight* line as the other. The reason: ALL HI-DENSITY "Van Dyke" Leads are identical... uniformly graded and "engineered" never to vary in any given hardness. Work goes faster, smoother with fewer sharpenings.



Ask Your Dealer to Demonstrate TODAY

MICROTOMIC VAN DYKE DRAWING PENCILS

The EBERHARD FABER Drawing Pencil in 18 degrees, 7B to 9H plus 6 degrees with Chisel Point Leads

FOR BETTER BUILDING

(Continued from page 20)

Blanket insulation in both wall and floor units is placed during fabrication.

Built-up plywood roof rafters, completely fabricated at the factory, have been developed, over which longitudinally braced plywood roof decking is placed; finish roofing is conventionally applied. Roof insulation, in blanket form, is attached to the back of second-story wall and ceiling panels.

The house, exclusive of lot, is intended to sell complete for less than $3,000. Shipment of the house parts will be to building material dealers who will provide the crews for erection. Willisway System, 9 S. Clinton St., Chicago 6, Ill.

TEMPERATURE REGULATOR

A self-contained, spring loaded, internal pilot, piston operated *Temperature Regulator* for steam service features Duo-Matic Control—both accurate temperature regulation and pressure control obtained simultaneously with a single regulator. The unit has a thermostatic element with 100°F. adjustable temperature range, equipped with metal diaphragms. All wearing parts are renewable. Leslie Co., 57 Delafield Ave., Lyndhurst, N. J.

HEAT PANELS

Immediate production of the *Base-Ray Heat Panel* has been announced by Burnham Boiler Corp., Irvington, N. Y. Developed by research engineers at the University of Illinois, the panel is a hollow, cast iron baseboard unit (see AR, June, 1945, p. 124).

UNIT LOCK

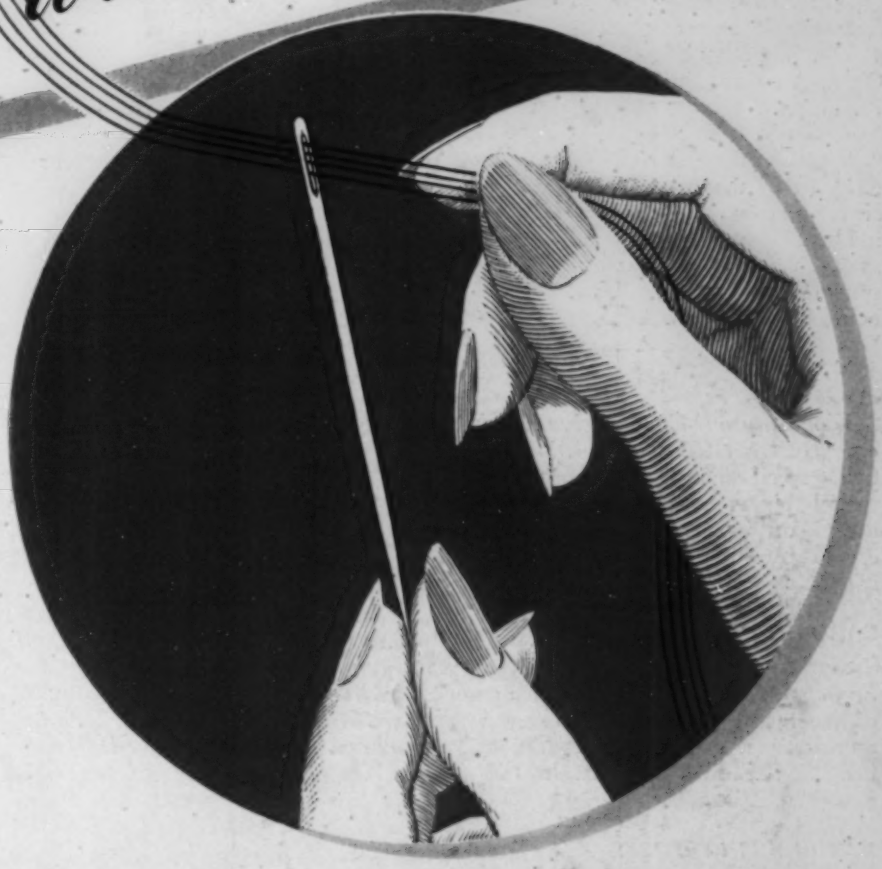
A new lock, the *Corbin Unit Lock*, is said to offer home owners complete freedom from the annoyance of sticking and binding knobs and latches because it is assembled at the factory in one complete unit. Installation is simple, with no mortising necessary—the unit slips into a slot in the edge of the door and is made fast by two bolts without touching or adjusting the working parts in any way. P. & F. Corbin, New Britain, Conn.

DOORSTOP

An easily installed *Door Stop-Nut* slips over the top knuckle of a door hinge and is held secure by the hinge pin. Eliminating the need for baseboard or floor type door stops, the unit prevents the banging of doors against walls or furniture. Door Stop-Nut, Inc., 810 W. 76th St., Chicago 20, Ill.

(Continued on page 140)

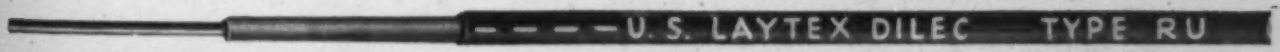
Streamlined to thread more wires in conduit



New space-saving Laytex Wires and Cables are now available for branch circuit wiring.

These smallest diameter, lightest weight rubber covered wires and cables make possible *adequate wiring* with *minimum conduit space.*

Produced by the unique "U. S." process of continuous dipping, drying and vulcanizing, Laytex Wires have perfectly centered conductors, insulated with 90% unmilled, grainless natural rubber having excellent dielectric strength. Laytex Wires are compact, durable, flame retardant and highly resistant to moisture. They are particularly suited to modern architectural needs.



U.S. Laytex ELECTRICAL WIRES AND CABLES

ADEQUATE WIRING SERVES AND SAVES — THE KEY TO THE HOME OF TOMORROW

★ *Smallest diameter, lightest weight rubber covered building wire.*

★ *Perfectly centered conductors.*

★ *High dielectric strength.*

★ *Flame-retardant, moisture-resistant finish.*

★ *Free stripping.*

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MANUFACTURERS' LITERATURE

AIR CONDITIONING

Air Filtration in Central Systems. Full information on Fiberglas Dust-Stop Air Filters: dimensions, ratings and manufacturing tolerances table; data on efficiencies; installation details; specifications; maintenance; applications. 24 pp., illus. Owens-Corning Fiberglas Corp., Toledo, Ohio.*

Water-Chilling Units. General information and specification summary. 4 pp., illus. Westinghouse Electric Corp., Air Conditioning Division, 150 Pacific Ave., Jersey City 4, N. J.*

Westinghouse Precipitron. Description of the Precipitron electronic air cleaning system for commercial and industrial uses. Capacity and dimension table. Explanation of how the system works. 6 pp., illus. Westinghouse Electric Corp., Air Conditioning Division, 150 Pacific Ave., Jersey City 4, N. J.*

Worthington Evaporative Coolers (Bulletin C-1100-B27). Description, specifications, selection tables, typical piping arrangements. 8 pp., illus. Worthington Pump and Machinery Corp., Air Conditioning and Refrigeration Division, Harrison, N. J.*

BAR SCREENS

Mechanically Cleaned Bar Screens (Bulletin 479). Description of the machine and how it operates, specifications, data tables, applications. 8 pp., illus. Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis.

BATHROOM FIXTURES

Sanitary Toilet Seats. A catalog of self-raising and other seats. 8 pp., illus. Sperzel Co., Minneapolis 3, Minn.

CONVEYORS

Lamson Lightweight Portable Gravity Conveyor. Description including parts specifications, with typical uses. 4 pp., illus. Lamson Corp., Syracuse 1, N. Y.*

DUMBWAITERS

Dumbwaiters and Doors. A catalog of electric and automatic brake dumbwaiters, counterbalanced dumbwaiter doors, passenger, freight and sidewalk elevators, freight and passenger cars. Includes specifications, tables of standard sizes, and full information on scope of use. 24 pp., illus. John W. Kiesling & Son, Inc., 2409-33 Pacific St., Brooklyn, N. Y.

FACTORY PLANNING

Industrial Logistics. How a planned system of materials transportation reduces costs in procurement, production and distribution of goods. 12 pp., illus. The Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 14, Ohio.

GLASS

Planning Ahead With Glass for More Enjoyable Living. Over a hundred ideas for the use of glass in residential building — in living room, hallways, dining room, kitchen, bathroom, bedroom, basement and attic. Includes basic information on solar heating and "window conditioning." 30 pp., illus. Libbey-Owens-Ford Glass Co., Toledo 3, Ohio.* 10 cents.

HEATING

Byers Radiant Heating in a Garage (Case Study No. 5). Application of radiant heating in an industrial garage and service station. Describes the installation, design of the heating coils, operation. 6 pp., illus. A. M. Byers Co., Pittsburgh, Pa.*

Certified Counterflow Air Conditioner Heating System; Certified Gravity Steel Furnace and Air Conditioning Units; Mammoth Certified Vertical Steel Tubular Heaters. Descriptive circulars including complete specifications for each type of furnace. 4 pp. each, illus. Stainless & Steel Products Co., 1000 Berry Ave., St. Paul 4, Minn.

Convector Radiation (Bulletin 245). Describes method of operation, advantages claimed. 4 pp., illus. Modine Mfg. Co., Racine, Wis.*

Econostat Temperature Control System. Heat regulation system controlled by outdoor temperature. Description of system and how it works, features, applications. 8 pp., illus. Barber-Colman Co., Rockford, Ill.*

S.B.I. Rating Code (A.I.A. File No. 30-C). The Steel Boiler Institute Rating Code covering commercial and residential steel boilers. Includes standardized sizes for mechanically-fired boilers, a new grate area formula and furnace volume requirements for hand-fired boilers and a code for testing oil-fired boilers. 24 pp. Steel Boiler Institute Inc., 366 Madison Ave., New York 17, N. Y. 50 cents.

JALOUSIES

Jalousies. Description of and uses for jalousies; specifications; stock sizes; diagrams. 4 pp., illus. Pro-Tect-U Jalousie Co., 2762 S. W. 10th St., Miami 35, Fla.

PARTITIONS

Certain-Teed 2-in Solid Plaster Partition. Description of a non-load bearing partition for new construction or remodeling. Includes specifications and method of construction. 6 pp., illus. Certain-Teed Products Corp., 120 S. La Salle St., Chicago, Ill.*

PIPING

Volumetric Capacities of Tube-Turn Welding Fittings. Formulae used to compute the volumetric capacities, and tables giving the volumetric capacity in cu. in. of the most commonly used Tube-Turn welding fittings. 10 pp., illus. Tube Turns, Inc., Louisville 1, Ky.

PLASTICS

Plastics Primer. Factual information on the phenolic plastics, with a table showing the characteristics and uses of various phenolic compounds. 8 pp., illus. Durez Plastics & Chemicals, Inc., North Tonawanda, N. Y.*

Velon and Foamex. Description of the two materials, their qualities and uses, plus two pages of general information on molded and extruded plastics. 20 pp., illus. Firestone Industrial Products Co., Akron, Ohio.*

The Watertown Book of Plastics. General information on thermosetting and thermoplastic materials, saran, lucite, cerex, nylon and polyethylene, and specific information (including properties chart) on Neillite. Also a discussion of molding methods and engineering details. 44 pp., illus. The Watertown Mfg. Co., Watertown, Conn.

RECONVERSION PLANNING

Production Planning Data. A set of production planning cards and data sheets intended for use in reconversion, provision for expanded facilities, and new building plans. Provide scale machine models to be placed on factory floor plan and arranged to meet specific requirements. Plan-O-Mill Corp., 1811 E. Eight Mile Rd., Hazel Park, Mich.

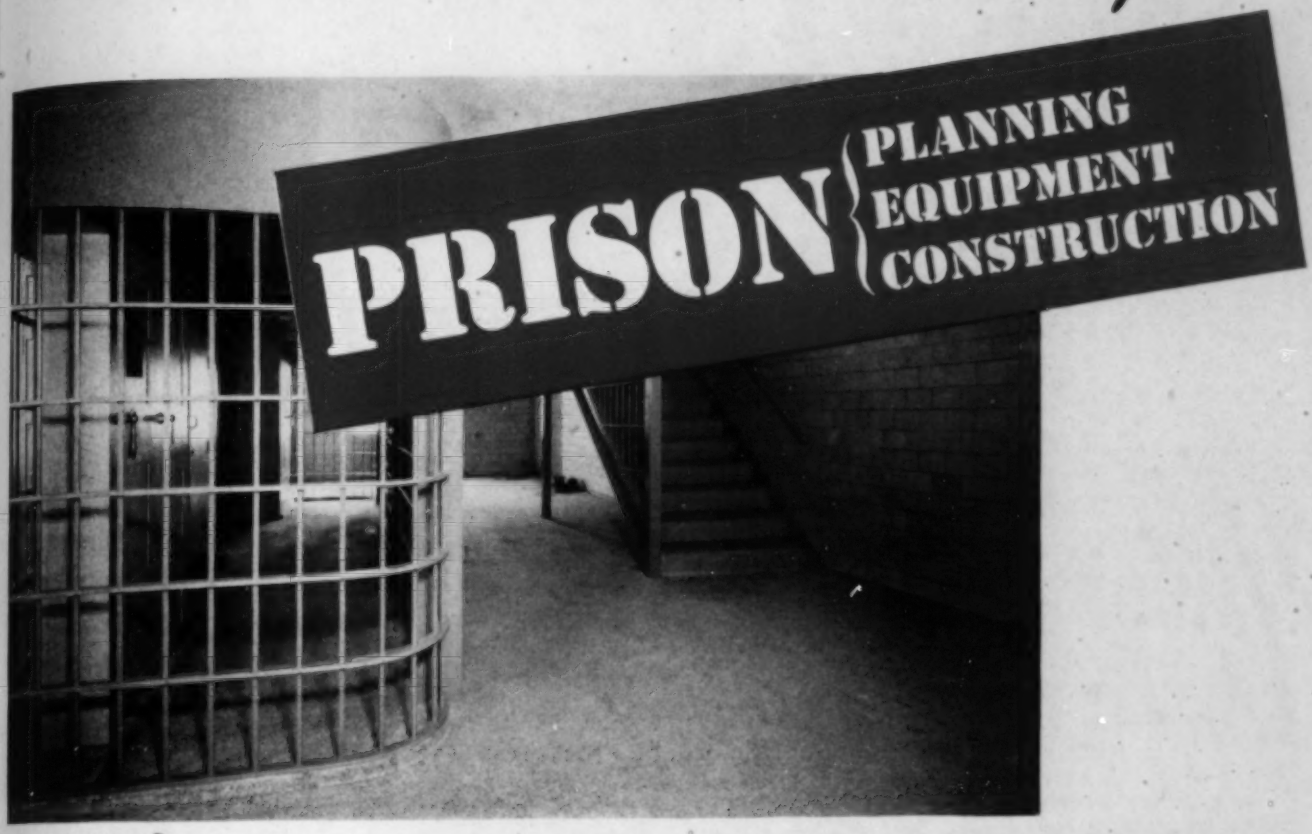
RUBBER

Cellular Rubber. Describes various forms in which sponge rubber, bonded fiber and other sub-density materials are manufactured. 4 pp., illus. Sponge Rubber Products Co., Shelton, Conn.

(Continued on page 26)

*Other product information in Sweet's File, 1945

VAN DORN *Recognized Authority on*



CALL IN A VAN DORN PRISON EXPERT

who will be glad to co-operate with suggestions, design sketches and estimates.

• Van Dorn is headquarters for prison design and construction. It has planned and built more prison projects than any other organization in America. Van Dorn cells are on guard from Sing Sing to San Quentin—from Calgary to Cristobal.

Plans for new prison structures, or remodeling of old equipment, should be based on sound and tested penal practice. To avoid unnecessary work, worry, expense or dissatisfaction . . . consult Van Dorn.

From its background of 68 years of experience, Van Dorn offers architects authoritative and up-to-the-minute information on prison planning. Van Dorn's manufacturing facilities and shop equipment, occupying more than 400,000 square feet, are complete. Its erection methods are modern and efficient.

There is no obligation in discussing prison planning with a Van Dorn prison specialist. Ask him to call.

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Jerry?

• He's the chap responsible for all those Jerry-built lighting fixtures that broke out like a rash o'hives these past few hectic years.

Worst of all Jerry is still around, making the same dubious kind of lighting equipment . . . and still "hooking" certain unsuspecting buyers. SILV-A-KING products, on the other hand, are honest, through and through. They're made of dependable, seamless heavy gauge steel . . . drawn in one piece. Their efficient lifetime reflectivity is the result of a porcelain enamel finish typically SILV-A-KING!

You'll find it good practice to specify SILV-A-KING Products now, and for years and years to come.

SILV-A-KING "SPECIFICATION"
Lifetime porcelain fluorescent unit

BULLETIN 45 FS — YOURS FOR THE ASKING!

BRIGHT LIGHT REFLECTOR CO. INC.
Fairfield and State • Bridgeport 5, Conn.

SILV-A-KING LIGHTING EQUIPMENT

Manufacturers' Literature

(Continued from page 24)

STEEL

Jessop Stainless Steels. The various types produced by Jessop, their physical properties and mechanical characteristics, plus a page of information on the company's stainless-clad steels. 8 pp., illus. Jessop Steel Co., Washington, Pa.*

SURFACE COATING

Aquella. Question and answer brochure describing a mineral surface coating that waterproofs and dampproofs interior and exterior porous masonry surfaces such as concrete, masonry blocks, common brick, rough plaster and stucco. 4 pp. Prima Products Inc., 230 Fifth Ave., New York 1, N. Y.

VENTILATION

Put the Wind to Work. Bulletin on the "Agitair" air exhauster. Typical applications, engineering data selecting the proper size, location principles. 10 pp., illus. Air Devices, Inc., 17 E. 42nd St., New York 17, N. Y.

WINDOWS

The Ultimate in Modern Ventilation and Vision. Descriptive folder on an aluminum package window unit. Gives specifications and installation details. 4 pp., illus. Watco Engineering, Inc., 2200 Scranton Road, Cleveland 13, Ohio.

LITERATURE REQUESTED

The following architects request manufacturers' literature:

Frank N. Emerson, F.A.I.A., and Richard S. Gregg, A.I.A., 300 Alliance Life Bldg., Peoria 2, Ill.

E. Ellsworth Giles, 113 Morristown Rd., Bernardsville, N. J.

Fenno and Podd, 525 Delaware Ave., Buffalo 2, N. Y.

Charles C. Henderson, A.I.A., Construction Dept., Northwestern Univ., 619 Clark St., Evanston, Ill.

August Julius Ignelzi, A.I.A., 852 Carolina St., Gary, Ind.

Thomas Larrick, A.I.A., 166 Morris Ave., Athens, Ohio.

Joseph H. Messineo, Dr. Scholl's Foot Comfort Shops, Inc., 213 W. Schiller St., Chicago, Ill.

Harry Ray Nay, Cadiz Pike, R.F.D. No. 1, Martins Ferry, Ohio.

Samuel Pelton, 427 N. Broad St., Elizabeth, N. J.

Stern de Mexico, S. de R. L., S. Juan de Letran 21-914, Mexico, D. F.

Thomas H. Voshell, 88 Broad St., Charleston 5, S. C.

Lawson Libby Wagner, Winch Bldg., Laredo, Texas.

Stanley M. Ward, 19 N. Fullerton Ave., Montclair, N. J.

Josam DRAINS *again met every requirement*

Penicillin—the wonder drug of the year—can well stir the imagination . . . for from the lowly mold of ordinary earth comes a life sustaining substance so potent that through its healing power, ravaging diseases become powerless and almost incurable persons are made whole once more. But the production of Penicillin is still another story, for the problems of culture and control on a large scale basis were far different than obtaining a drop or two from a mold.

To the men who designed and created this great modern laboratory-type building—home of Penicillin at Lederle Laboratories, Inc., Pearl River, New York, goes the lasting appreciation of a grateful people who have already seen the wonders this drug has performed since it has been available in quantities. Here is a building unique in construction, in which every material, equipment and product used had to measure up to a standard that tolerated no compromise with the perfection of control so necessary to the specialized production of Penicillin. Proud that Josam drains and other products were used throughout, Josam has still greater pride in the part that it contributed to the means by which new hope is given to so much of humanity.

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Pearl River, N. Y.

A DESIGN for PRODUCTION

Construction: Steel and brick, daylight lighting provided through multi-window installations. Total space 120,000 feet.

Temperature control: Third and fourth floors almost entirely filled with incubators with temperature maintained at 37° F; fluctuation allowance—1°.

Peak employment—500.

First building of its particular type, devoted to the production of Penicillin on a commercial scale by the flask method. Penicillin, as a result is now available for general use as the need for it arises.

ONE ACHIEVEMENT DESERVES ANOTHER . . . TO BE SURE, PUT JOSAM ON THE JOB!

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See our Catalog in Sweets'. *Member of the Producer's Council*

REQUIRED READING

TOMORROW'S HOUSE

By George Nelson and Henry Wright. New York (1230 Sixth Ave.), Simon and Schuster, 1945. 8 by 11 in. 214 pp. illus.. $3.00.

Of all the many books on home planning which have mushroomed into existence within the past few months, this is certainly one of the most stimulating. Not because it offers vast amounts of useful information; not because it abounds with clever hints and adroit planning tips. It doesn't. There is almost none of the usual "Do-and-Don't" type of textbook information within its 200 pages. There is not a single floorplan. Messrs. Nelson and Wright did not set out to write a manual; they set out to pry the prospective homeowner loose from his traditional complacency. They set out to make him *think*.

The trouble is that those prospective readers with the strongest traditional leanings will probably not be actual readers. It would take the merest riffling of pages to provoke a reaction like this: "It's all about *modern* houses. That's not what I want." Those already converted probably will buy it enthusiastically, and read it the same way.

Such an enthusiastic reader might, if he also read thoughtfully, arrive at a vague feeling of disappointment. Disappointment not with the clean philosophy of the authors, but with the prospect for getting the house that would grow in his mind. The authors write frankly and honestly about "tomorrow's house," and they do not make any effort to make it sound easy to achieve or acquire. Some of the chapters deal almost wholly with future possibilities, with trends instead of present-day facts. They speak frankly about the bugs yet to be taken out of some of the newer ideas. The reader is left with the feeling that relatively few architects could handle the house proposed, and is told pretty definitely that it would cost like sin.

And yet — Messrs. Nelson and Wright have spoken well for the "modern" house. Once you have forgiven them for their very crude satire in the second chapter (a choice bit entitled "Home is Where You Hang Your Architect," which would have the architect a hidebound clod), you are pretty sure that the lay reader would start looking around his present abode with a slightly jaundiced eye. With superb accuracy this book puts its finger on any number of sore spots in the traditional house: the bad lighting, the generally poor acoustics, the kitchen that has been efficientized down to a glorified closet, the eternal struggle with temperature and fresh air. No soothing ointment is proffered for these sore spots, but a nice, sharp, sterile knife has been laid out ready for use. Here, the authors say in effect, you don't have to put up with these things, you know. You can have your home light conditioned, sound conditioned, air conditioned, planned just the way you like it.

The sum total is a book which will make its every reader, architect and client alike, probe more deeply into the underlying reasons for a house before he starts to plan.

STANDARDS FOR SCHOOLHOUSE CONSTRUCTION

West Virginia Council on Schoolhouse Construction. Charleston, W. Va., Division of Schoolhouse Planning, State Dept. of Education, 1945. 6 by 9 in. 84 pp. $1.00.

Here is a small book crammed full of practical information for both the school board and its architect. As the introduction says, it offers them "the accumulated, recent, screened experience of their myriad brethren."

Starting with a chapter on "Planning a School Building Program," which discusses such school board problems as determining building needs, planning the building and choosing the architect, it continues with matters of more direct concern to the architect — site selection, building characteristics and construction details, and service systems.

As its title makes clear, this is a book of *standards*. As such it presents only the minimum requirements, and allows for the maximum flexibility in actual planning. It is exceptionally thorough, giving even such details as the proper distance from floor to top of chalk trough for chalkboards for the various grades.

FIRE PROTECTION

Through Modern Building Codes. By B. L. Wood. New York 1 (350 Fifth Ave.), American Iron and Steel Institute, 1945. 6 by 9 in. 246 pp.

Mr. Wood has divided this book quite sensibly into two sections, the first dealing with recent developments in fire protection, fire hazards, classification of buildings by occupancy, fire safety objectives and criteria, etc. The second section consists of regulations which were prepared as a part of the program of the Committee on Building Codes of the American Iron and Steel Institute to illustrate a practical application of the principles of fire protection. The regulations reflect careful study of the provisions and recommendations of the National Bureau of Standards and other regulatory bodies, and represent the Committee's recommendations relative to fire protection regulation through building ordinances.

PERIODICAL LITERATURE

GARDEN CITIES

Garden Cities and the Metropolis. By Lloyd Rodwin. The Journal of Land and Public Utility Economics (Sterling Hall, Univ. of Wisconsin, Madison 6, Wis.), Aug., 1945, pp. 268-281.

Largely a critique on Ebenezer Howard's turn-of-the-century book, *Garden Cities of Tomorrow* (1902), this article makes a number of highly pertinent points. "Well integrated cities, planned land use and controlled size and growth are recognized desiderata. . . . Though bigness is not a curse, amorphous sprawl certainly is," Mr. Rodwin says. He explodes the argument that decentralization is necessary as a safeguard against bombing, maintaining that even with the atomic bomb a city is by its very nature a strong point in a nation's defense. "The weak points of the Garden City idea stem from its failure to comprehend many of the essential chores of the city," he declares. "Goals must always prove impracticable unless related to vital needs and interests. . . . He who would help build the city of tomorrow must reckon with the lives and living habits of human beings: with jobs and security, homes and population trends, aesthetics and economics, politics and social drift."

UBIQUITOUS PREFABS?

The Truth About Prefabricated Houses. By Gordon H. Cole. Science Digest (200 E. Ontario St., Chicago 11, Ill.), Nov., 1945, pp. 7-10. Condensed from PM.

The prefabricated house is not going to take its place as an integral part of our landscape for many years to come, Mr. Cole predicts. Factory-built houses, he says, "still are in their horseless carriage stage, still are looking for a Henry Ford, still are fighting for permission to be built inside city limits."

SPECIALIZED LIGHTING

Art Gallery Lighting. Report of the Committee on Art Gallery Lighting of the Illuminating Engineering Society, New York. Journal, Royal Architectural Institute of Canada (57 Queen St. W., Toronto 1, Can.), Oct., 1945, pp. 197-207, illus.

An excellent report offering general guidance in the difficult problem of art gallery lighting. Especially helpful are the tables of display specifications and the numerous diagrams.

On Choosing an Architect

And someday it may happen that a victim must be found,
I've got a little list, I've got a little list
Of qualified designers whose feet are on the ground
And who never should be missed, who never should be missed.

◆ This parody of Ko-Ko's song, which threatens to be a duet of the deep bass of A.H.A. and the tenor treble of the A.I.A., might be amusing if it did not have such far-reaching implications. The first implication, to the lay public, would be that only firms which had "done" hospitals were competent to do hospitals, and by the same token, they would be recorded and branded as specialists in that field and that field alone.

◆ To the lay mind, such a list of specialists in one field would tend to eliminate those firms from consideration in another field, a result to be deplored as inimical to the best interests of the public, the profession and to the hospital administrators themselves. Creative ability and architectural competence is not, and cannot be, relegated to a single type of building, or even a group of building types, except as the individual architect or firm may so choose to devote his or its talents.

◆ Experience in dealing with the special problems in any specific field is unquestionably valuable. But experience *alone* is poor criteria for the selection of an architect in that field, and the proposed list is based on experience. The fresh unprejudiced point of view of a competent firm, possessed of creative and administrative ability, may be even more valuable in providing improved solutions and most efficient, economical and aesthetically satisfying designs. A competent firm that has never done a hospital, can, through its powers of analysis, synthesis, imagination and ingenuity produce the sought-for improved design. It can consult any number of men experienced in hospital problems. It can profit also by vicarious experience. Hospital planning is no atomic secret, there is available an immense amount of published material, recorded experience, thoughtful discussion, present-day standards, projected ideas.

◆ It is both natural and proper that architects who have shown superior ability in designing outstandingly successful hospitals should be considered for subsequent similar projects. But—how would they ever have had their first opportunity to produce such buildings if a building committee used an "official list" limited to those who had done hospitals before?

◆ It would be a mistake for any building committee to limit its choice of architects to any list of those who had designed the particular type of building under consideration. The committee should seek the best creative and executive ability in the profession, whether or not its superiority or competence had been demonstrated in that *one* field. The talents shown in some other field can, with remarkable facility be effective in the design of any specific building type. This is demonstrated by innumerable examples.

◆ For a professional organization to attempt officially to list its members as qualified or not, with all the implications (ethical, legal, practical) of such a listing, would seem a matter of such importance as to call for the most careful deliberation and a final democratic decision by referendum.

Kenneth K. Stowell
EDITOR

CONSTRUCTION REVIVAL: A PREVIEW OF 1946

By Thomas S. Holden, President, and Clyde Shute, Assistant Vice-President, Statistics & Research Division, F. W. Dodge Corp.

How FAST can the predicted construction revival proceed?

That is the question to be answered in attempting a realistic estimate of 1946 volume. It is a question as to what extent the pressure of enormous needs and enormous potential demand can, in the space of a year, overcome retarding factors which are, at the outset of revival, quite potent.

Potential Demand Potential construction demand is generally considered so large that it is likely to require construction volume, over an extended period, in larger amounts than in any previous peacetime years. Many people anticipate high-volume revival to last five years; there are reasons to believe it may last ten, as (in spite of one major setback and some minor fluctuations) it did in the period following World War I.

There is plenty of factual evidence of a vast accumulated demand; evidence in the form of estimated shortages, of listings of contemplated and planned construction projects running into many billions of dollars, of announced expansion and rehabilitation programs of industries, commercial organizations, utilities, state and local governments.

Retarding Factors Three kinds of retarding factors exist. They are:

1. Increased costs and current confusion about market conditions, tending to discourage investors and influence postponement of decisions.
2. Continuing government controls.
3. Growing pains of an industry, made up of widely diverse factors, called upon to expand very suddenly its volume of operations.

Effects of Increased Costs Many prospective investors, large and small, receive a shock when presented with current estimates of the costs of their projects, as compared with their earlier estimates. Current estimates, for good reasons, are frequently higher than would be indicated by published cost index numbers, which range for different types of structures from 25 to 35 per cent over averages for the year 1939. Some contractors are currently refusing to make lump-sum bids on large projects, preferring to take work only on a cost-plus basis. Lump-sum bids, when tendered, must necessarily include margins of safety to protect the contractor against uncertainties on prices, deliveries of materials, wage-scales, work-stoppages and labor-efficiency factors.

Public officials must, in many cases, secure additional appropriations to cover costs that are greater than their earlier estimates. Business executives and individuals must also increase their construction budgets; they must frequently negotiate loans on a different basis from that which they anticipated. Many tend to assume that they might fare better, in terms of price and in terms of improved materials and equipment, by postponing their projects. Against these considerations they must weigh the cost and inconvenience of waiting for needed facilities, and the quite real possibility of further rises in construction costs.

It is our view that the two principal components of construction costs, material prices and wage scales, will rise somewhat further. It is our hope that they may reach a fairly stabilized level not too much above the present, without extreme fluctuations resembling those of the 1919-1920 postwar inflation period and at a level not conspicuously out of line with general commodity prices.

Government Controls The War Production Board abolished all L-41 orders on October 15, 1945. It has also eliminated most restrictions on production of construction materials.

Price and rent controls remain.

Price controls, highly desirable in theory, have acted in some degree to retard production of needed materials. OPA has reluctantly granted some increases in ceiling prices, to permit manufacturers to offer the increased wages necessary to recruit adequate manpower. The process of securing approvals for increases is frequently drawn out, and the continued effectiveness of price control in a peacetime market is an open question.

Rent control, which applies nationally to housing accommodations only, is a deterrent to new rental housing projects. OPA has been petitioned to exempt from rent ceilings all new rental housing, as a sound measure to encourage this much-needed class of building, which is now the one type of project definitely retarded by a specific control of the federal government.

The Industry's Capacity to Expand The construction industry is, by its nature, the most versatile and

(Continued on page 82)

ESTIMATED CONTRACT VOLUME FOR 1946 (In millions of dollars*)

* 37 Eastern States — PROJECT TYPE	*Year 1945	Estimate Year 1946	% Change
COMMERCIAL BUILDINGS	260	480	+ 85
MANUFACTURING BUILDINGS	1000	900	− 10
EDUCATIONAL AND SCIENCE BUILDINGS	95	170	+ 79
HOSPITAL AND INSTITUTIONAL BUILDINGS	125	170	+ 36
PUBLIC BUILDINGS	15	50	+ 233
RELIGIOUS BUILDINGS	30	60	+ 100
SOCIAL AND RECREATIONAL BUILDINGS	60	100	+ 67
MISCELLANEOUS NONRESIDENTIAL BUILDINGS	155	150	− 3
Total Nonresidential Buildings	1740	2080	+ 20
APARTMENT BUILDINGS, HOTELS AND DORMITORIES	95	225	+ 137
ONE- AND TWO-FAMILY HOUSES	348	1100	+ 216
OTHER SHELTER	42	25	− 68
Total Residential Buildings	485	1350	+ 178
TOTAL BUILDING	2225	3430	+ 54
PUBLIC WORKS AND UTILITIES	935	1320	+ 41
TOTAL CONSTRUCTION	3160	4750	+ 50

Note: Estimates here given include volume of contracts and *work started* on new construction and major alterations and additions, such figures being comparable with F. W. Dodge Corporation's factual records.

* *9 Months Actual*
3 Months Estimated

THE ESTIMATES BY PROJECT CLASSIFICATION

Commercial Buildings Estimated at a relatively high rate of increase. Store modernizations, moderate-sized store buildings, filling and service stations likely to predominate in early revival stages. A number of department store and chain store organizations have large building and expansion programs, some of which are likely to get started in 1946.

Manufacturing Buildings In the course of the year 1945, there was a shift from ordnance and war plant construction to reconversion and expansion programs of industries planning for peacetime production. This second phase will continue in 1946, possibly not in large enough volume to offset the war plant construction of early 1945. The volume estimated for 1946, although under 1945, is very high compared with previous peacetime years.

Institutional and Public Buildings This broad category is meant to include Educational and Science Buildings, Hospitals and Institutions, Public Administration Buildings, Religious Buildings, Social and Recreational Projects. Needs in these classifications are very great, and the accumulation of planned projects is impressively large. Public projects will not be needed or pushed as a means of providing employment. With the possible exception of schools and hospitals, the urgency of need in these classifications is somewhat less than in the fields of housing, commerce and industry. Many projects in these classifications are postponable; many will require reconsideration from the point of view of costs. Moderate dollar increases, as estimated, represent fairly high percentage increases.

Miscellaneous Nonresidential Building War projects in this classification have dropped off. Transportation terminals constitute the principal peacetime projects in this classification; they are expected to increase in number as revival progresses.

Residential Building This probably represents the most widespread need of the country. Postwar estimates of residential volume range from an average of 500,000 non-farm

flexible of the important industries of the country. Architects, designers, general contractors, builders, and sub-contractors are usually ready to expand their operations greatly on very short notice. At this time most of these organizations are understaffed. For example, architects and engineers have, during the past year, been unable to recruit enough draftsmen to enable them to handle the volume of project-plans offered them. Building organizations will have to recruit superintendents and foremen. This condition, however, is not likely to last very long.

Material supply is still a problem as this is being written. It has been widely stated, however, that most of the essential materials will be flowing into the markets in near-adequate quantities by the spring of 1946. Rail and truck transportation difficulties may affect delivery schedules.

The manpower situation, particularly with respect to skilled building labor, is spotty. There has been unemployment in some trades and some localities, particularly in spots like New York where construction volume in the past two years has been even less than in the low years of depression. In many places, there are even now shortages in a number of the skilled trades.

At some fairly early stage of revival, shortages of skilled building labor are likely to constitute the principal retardment to rapid expansion of construction volume. Apprenticeship training will again become a very live issue in the industry.

Prospect for a reasonable minimum of labor troubles and work-stoppages in 1946 is fairly good, particularly if the New York stabilization plan becomes a pattern that will be followed in other important centers.

In New York an agreement has been worked out, between the Building and Construction Trades Council and the Building Trades Employers' Association, providing for a 7-hour day, hourly wages to be adjusted within the range of the Little Steel formula, liberal terms for admission of qualified veterans into union membership, and machinery for settling jurisdictional disputes without work-stoppages; at this writing, the agreement has not been approved by all the separate trades.

Present conditions with respect to materials and manpower do not suggest any ultimate limit on the capacity of the industry. They do indicate, however, a moderate speed of expansion in the transition year.

Volume in 1946 In consideration of the retarding factors of transition we estimate total 1946 dollar volume of new construction (as measured by contracts recorded for the 37 eastern states) at 50 per cent over 1945.

In dollars, this volume is greater than that of any of the years immediately preceding the war. Taking cost increases into account, it represents a physical volume somewhere between that of 1939 and 1940. The percentage increase is about as high as the highest ever previously attained from one calendar year to the next.

ESTIMATES BY PROJECT CLASSIFICATIONS *(Continued)*

family dwelling units a year (including housekeeping suites in two-family and multi-family buildings as well as single-family houses) to an average of 1,260,000 non-farm units a year for the ten years following the war. The Dodge annual-average estimate is 820,000 non-farm units a year through the years 1946-1955.

Apartment house building, for which there is a great need in most of the cities of the country, is apt to make a slow start, unless new rental housing is exempted from OPA rent ceilings at a fairly early date. Modernization of apartments, apartment hotels and hotels is likely to be large in volume as revival proceeds, probably not extensive in early stages of revival.

House building will start with buildings in middle price ranges. There exists today a far more alert and better organized home building industry than has existed in previous revival periods. These operative builders are set to push ahead as rapidly as possible on single-family houses for sale. There is also a huge backlog of plans for houses to be built on owners' order for owners' occupancy.

Total residential building in the entire United States, including all price ranges and all types (single-family houses plus housekeeping suites) is apt to approximate 325,000 units in 1946. On the assumption that house building will move much faster than apartment building, about 80 per cent of the units built in 1946 are likely to be single-family houses.

Estimates on 1946 residential building volume are based on the assumption that no ceilings will be imposed on sales prices of new houses. A bill has been introduced in Congress which would give OPA authority to impose such ceilings. While a preponderance of published opinion is to the effect that Congress is unlikely to enact this legislation, the proposal adds another element of doubt in the situation. It is generally believed that imposition of such ceilings would retard home building. Present estimates should probably be discounted substantially in the event the ceilings are imposed.

Heavy Construction Demands are very great, by privately owned utilities and by public agencies responsible for community improvements. Highway construction is likely to move ahead very rapidly. Heavy engineering construction uses mainly unskilled labor and, to a large extent, non-critical materials. Transportation bottlenecks affecting bulky materials may develop to the extent of slowing down heavy construction projects to some extent.

Deferred Maintenance and Repairs While not included in contract statistics, this represents a very large current market for materials and labor. Needs are enormous, urgent, less subject to postponement than new construction projects. The volume in 1946 could easily top all previous records.

NEW YORK STATE'S PLANS ARE READY

A BILLION DOLLAR BUILDING PROGRAM

By Thomas E. Dewey

Governor, State of New York

New York State is prepared to prosecute its billion dollar postwar public works program. This includes highways, parkways, grade crossing eliminations, state-aided public housing projects, and other state building projects.

New York State is in the enviable position of being ready to undertake a construction program of sound and necessary projects, but it is imperative that their construction should not proceed in strong competition with a private demand for men and materials. It is imperative that this construction be done at stabilized prices not inflated by competition between private and public demands. The projected New York works should be completed at a reasonable cost as an economic safeguard to the welfare of the people of New York State. These are important factors in determining the timing of our program.

The construction program developed by the New York State Postwar Public Works Planning Commission embraces construction and reconstruction of buildings, together with other projects for the Executive, Conservation, Education, Health, Mental Hygiene, Public Works and Social Welfare Departments. There are presently 583 of these approved departmental projects estimated to cost $117,224,755. When highways, housing and the like are added to the program it passes the billion dollar mark. This article deals only with departmental projects.

A major share of the approved departmental works is for the Department of Mental Hygiene. Our mental institutions now are overcrowded by more than 17 per cent. In the immediate future the demands imposed upon these institutions will be greatly increased. Modern methods in the scientific care of mental illness, with emphasis upon cure rather than custodial care, dictate the urgent need for construction of new additions and the replacement of antiquated structures. The Commission has approved projects for this department contemplating construction, reconstruction and modernization of existing buildings at a cost of $61,364,857.

Education Department construction and reconstruction, consisting of technical buildings, dormitories, additions and other structures as now approved will cost $23,383,836. Estimated costs of projects for other departments are: Conservation, $12,097,390; Correction, $8,189,244; Health, $394,282; Public Works, $6,499,300; Social Welfare, $3,582,959; and Executive, $1,712,876.

This departmental program is plant construction planning on a state-wide basis as it should be. It is a forward step for this state. Our Planning Commission has not only made ready for the postwar construction, it has devised a procedure of examination of construction and reconstruction requirements that will pay dividends to the people of this state for all future construction. Every project is closely scrutinized as to its need and its requirements to the end that a most efficient and economical unit is designed. Throughout the process, the department affected, the Superintendent of Public Works, the Director of the Budget, the Postwar Planning Commission, the State Architect and the private architect designated for the project, work together closely. Architects in private practice make a marked contribution to the thought and planning that accompany the actual work of design. New York private architects are doing the design work on a major share of the Departmental program.

Not only has the State projected these improvements but it is prepared to finance them. Upon my recommendation, the 1944 and 1945 Legislatures created and built up the Postwar Reconstruction Fund. It now totals $320,000,000 and by April 1, 1946 it should exceed $400,000,000.

The Postwar Public Works Planning Commission has also developed a municipal program of postwar public works providing assistance to municipalities by defraying one-half the cost of the preparation of plans. Municipal projects approved by the Commission number 3,223, representing a total construction cost of $242,406,579.

The Commission has filled an important role in discharging its statutory obligation of recording progress of design of railroad grade crossing eliminations, highways, parkways, public housing projects and other structures. It allocates funds subject to reimbursement, to Public Authorities including: The Port of New York Authority, Whiteface Mountain Authority, Jones Beach Parkway Authority, Nassau County Bridge Authority, New York City Tunnel Authority, Lower and Central Regional Market Authorities and Niagara Frontier Authority.

New York State is beyond the preliminary stage of postwar planning. It is ready to translate that planning into actual construction.

NEW YORK STATE'S PLANS ARE READY

JOHN E. BURTON,
Chairman
Dir. of the Budget

CHARLES D. BREITEL
Counsel to the Governor

MARTIN P. CATHERWOOD
Commissioner, Dept. of Commerce

HOLDEN A. EVANS, JR.
Executive Secretary

JULIUS J. GANS
Member of Assembly

FRANK C. MOORE
State Comptroller

D. MALLORY STEPHENS
Chairman, Assembly Ways and Means Committee

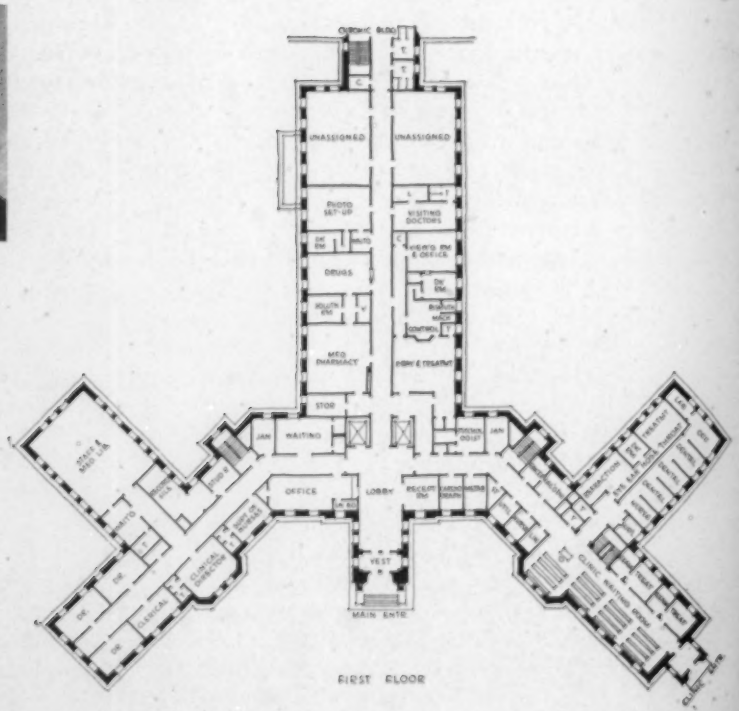
ARTHUR H. WICKS
Chairman, Senate Finance Committee

NEW YORK STATE POSTWAR PUBLIC WORKS PLANNING COMMISSION

CREATED by the Legislature in 1942, and streamlined in accordance with recommendations of Governor Dewey in 1943, the New York State Postwar Public Works Planning Commission is a pioneer in its field. It blazed the trail for postwar planning commissions and agencies of other states.

With the Director of the Division of the Budget as chairman, the Commission has seven members, four appointed by the Governor and three appointed jointly by the temporary president of the Senate and the speaker of the Assembly. In the personnel are: John E. Burton, Director of the Budget, Chairman; Charles D. Breitel, counsel to the Governor; Martin P. Catherwood, Director of the Department of Commerce; Julius J. Gans, Member of Assembly; Frank C. Moore, State Comptroller; D. Mallory Stephens, Chairman of the Assembly Ways and Means Committee, and Arthur H. Wicks, Chairman of the Senate Finance Committee.

Holden A. Evans, Jr., is Executive Secretary and Ross E. Sluyter is Chief Architect. Cooperating closely with the Commission are Charles H. Sells, Superintendent of Public Works, and Cornelius J. White, State Architect. Designation of all private architects on State departmental postwar public works projects is by Superintendent Sells.

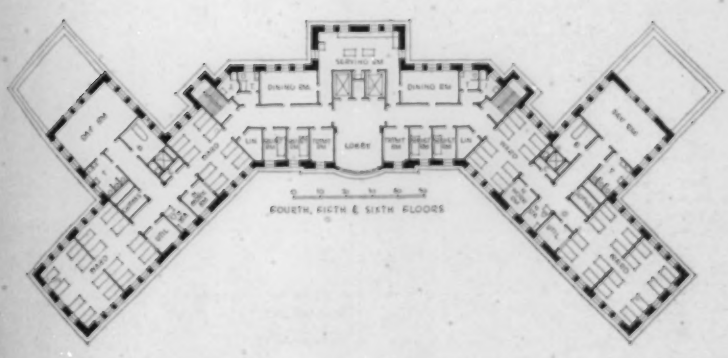


FIRST FLOOR

MEDICAL AND SURGICAL BUILDING

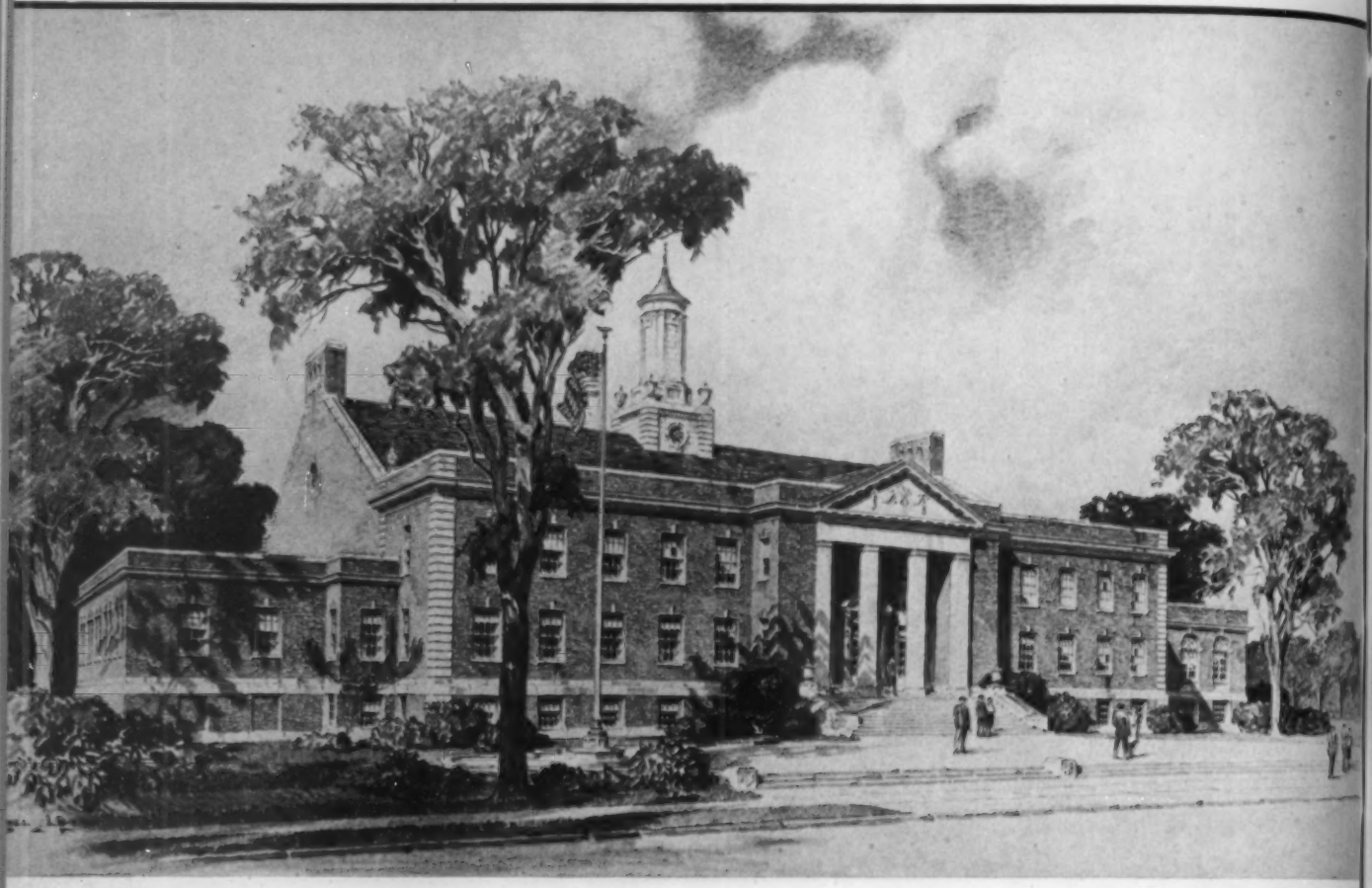
Craig Colony, Sonyea, New York

Crow, Lewis & Wick, Architects



THIS new building at Craig Colony, an institution for epileptics, will provide adequate centralized facilities for reception, diagnostic, and laboratory services, as present facilities are scattered and inadequate. The project is part of the institution's new rehabilitation program. Accommodations for 584 patients in 16 wards will alleviate existing overcrowded conditions and the wards will permit better care for those physically chronically ill. Facilities are provided for the medical care of employees.

NEW YORK STATE'S PLANS ARE READY

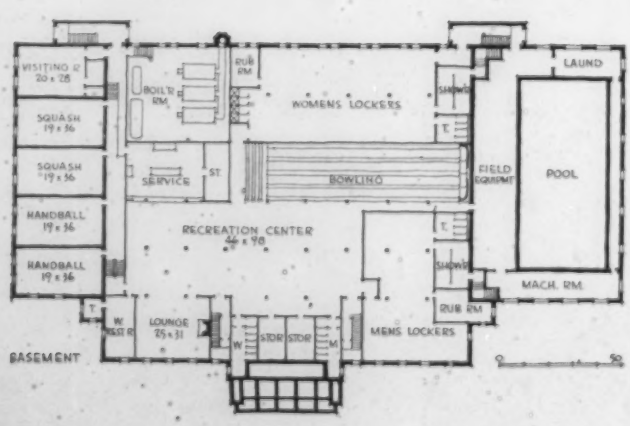


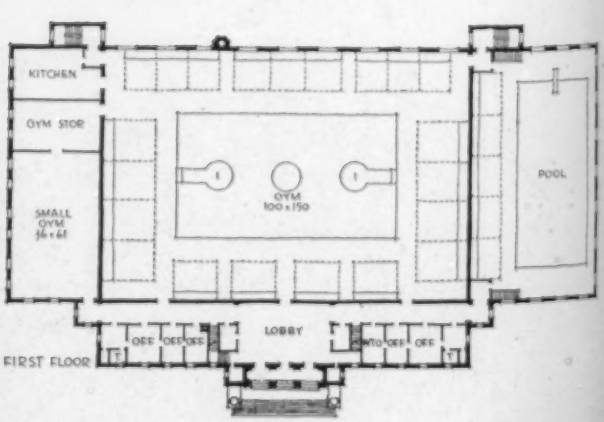
PHYSICAL EDUCATION BUILDING

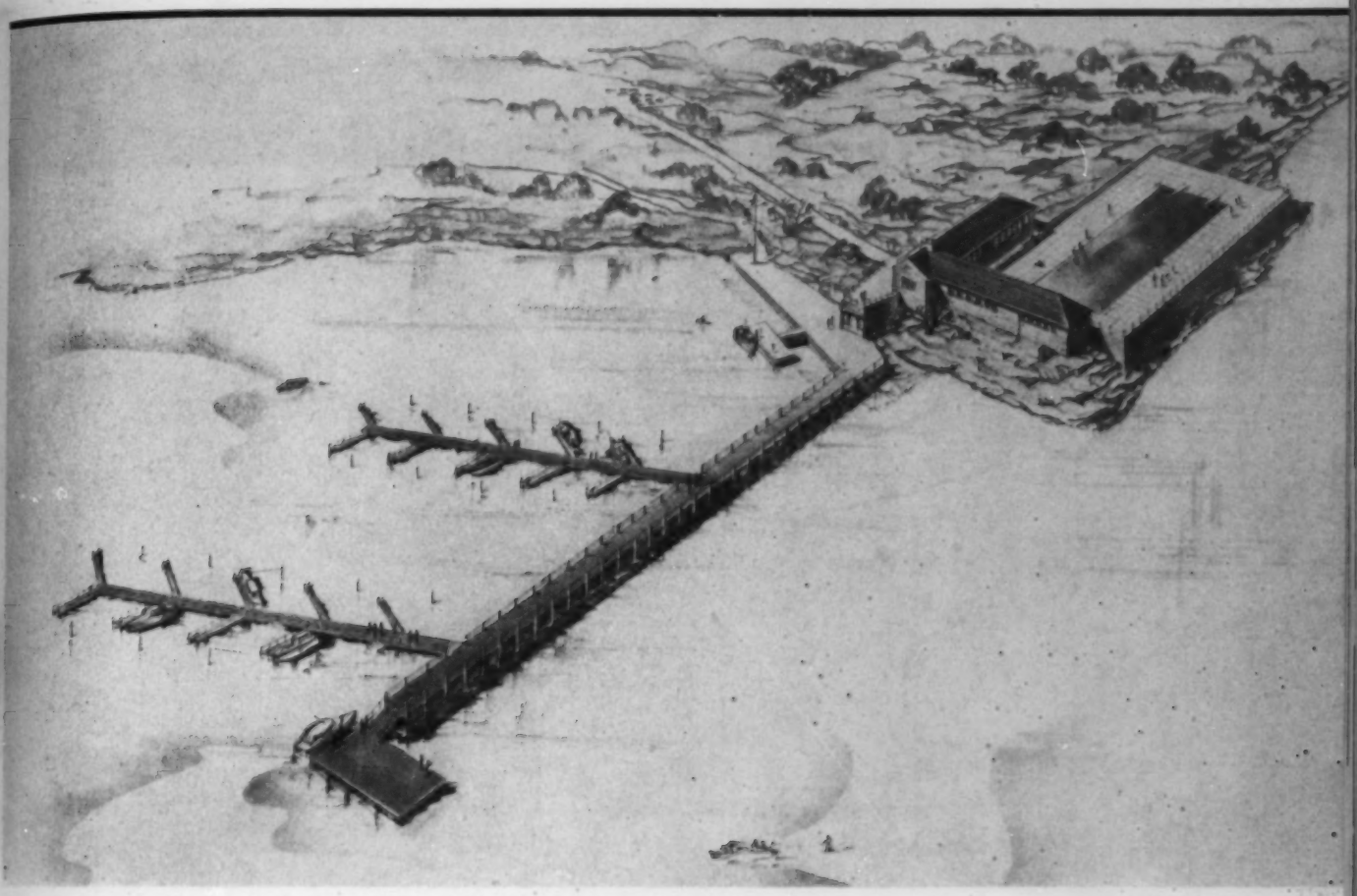
New York State College for Teachers, Albany

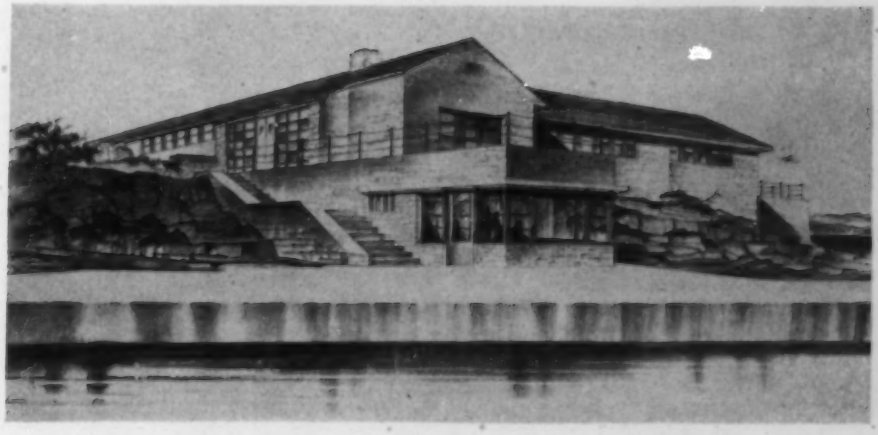
Gander, Gander and Gander, Architects

THIS new building has been approved to overcome the handicap that limited gymnasium facilities placed on the health and physical education program at the college. The new building provides adequate modern facilities, including a gymnasium 150 by 100 ft., which can be divided into three playing courts by removable partitions, or can provide a seating capacity of some 2,400 around a basketball court. Swimming pools, smaller gymnasiums, squash courts, bowling alleys, and the usual locker rooms and other facilities are provided.









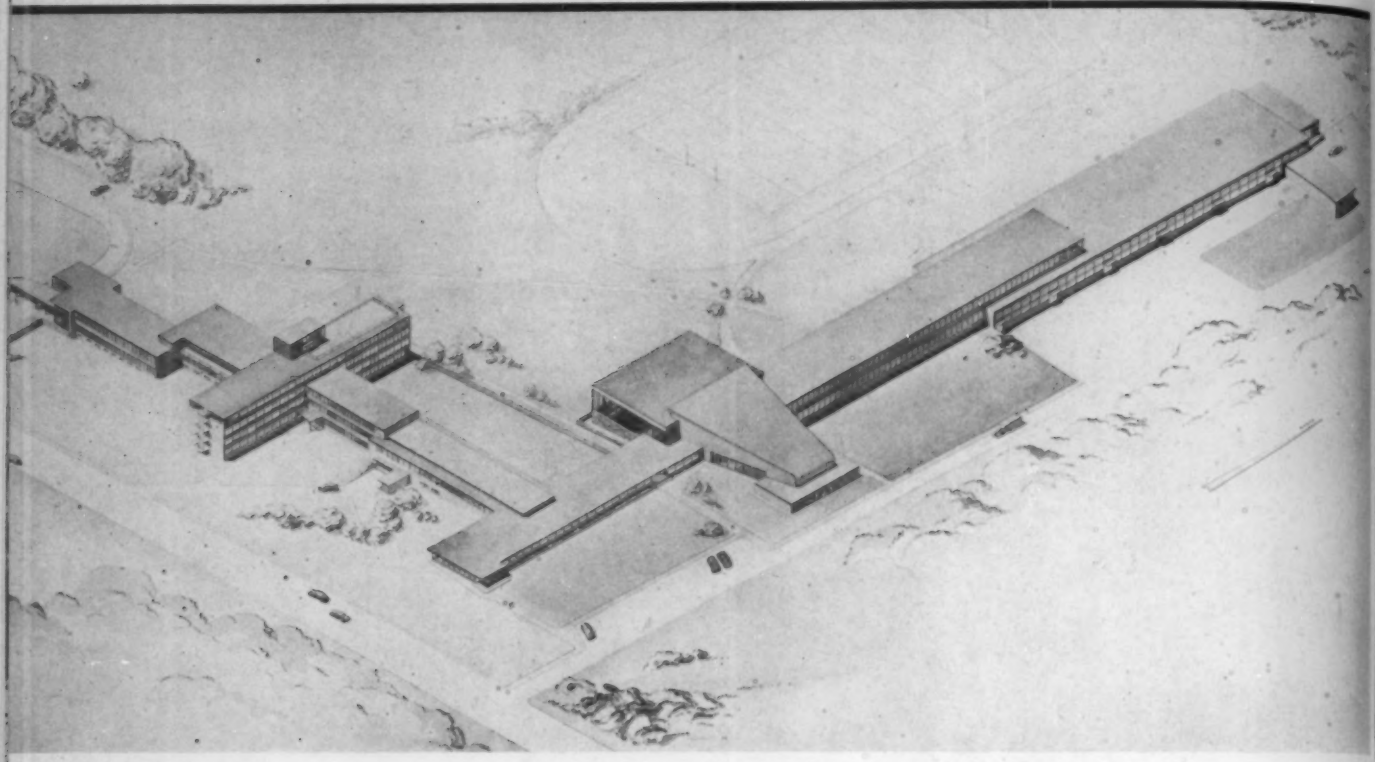
BATHHOUSE

Margaret Lewis Norrie State Park

Skidmore, Owings and Merrill, Architects

MARGARET LEWIS NORRIE STATE PARK on the Hudson River, nine miles north of Poughkeepsie, has existing facilities for camping, picnicking, boating, fishing, and restaurant accommodations. There are no other proper bathing facilities existing within a radius of 30 miles of the park, and within this area dwell approximately 75,000 persons. The project proposed to meet these needs contemplates a boat basin and a swimming pool with a bathhouse to accommodate 520 persons.

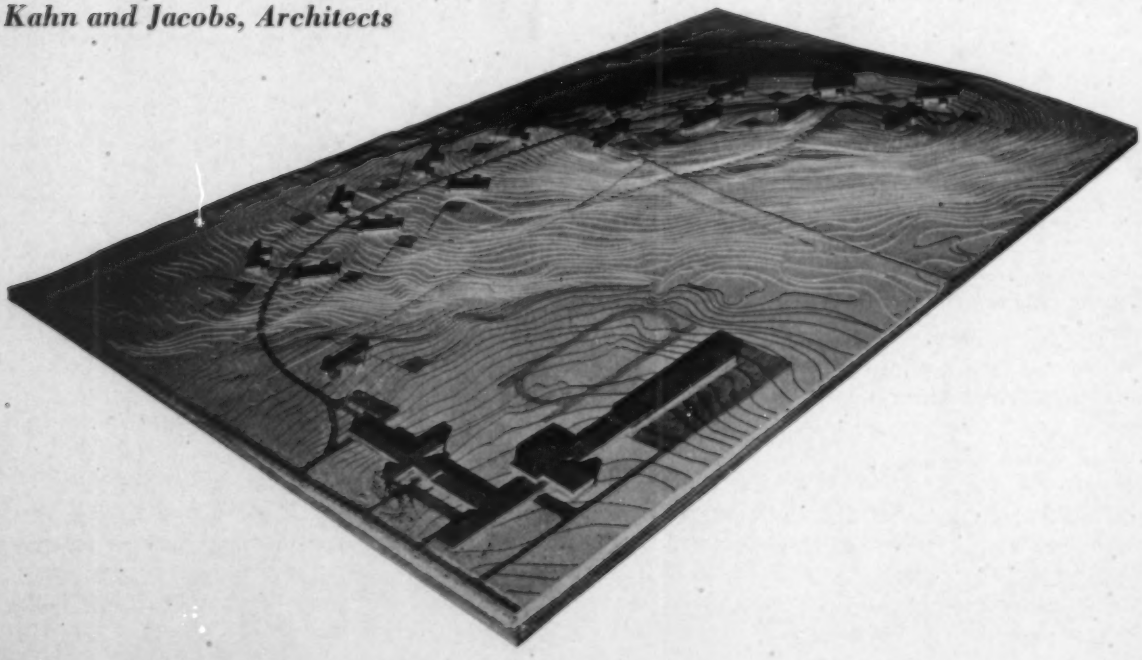
NEW YORK STATE'S PLANS ARE READY



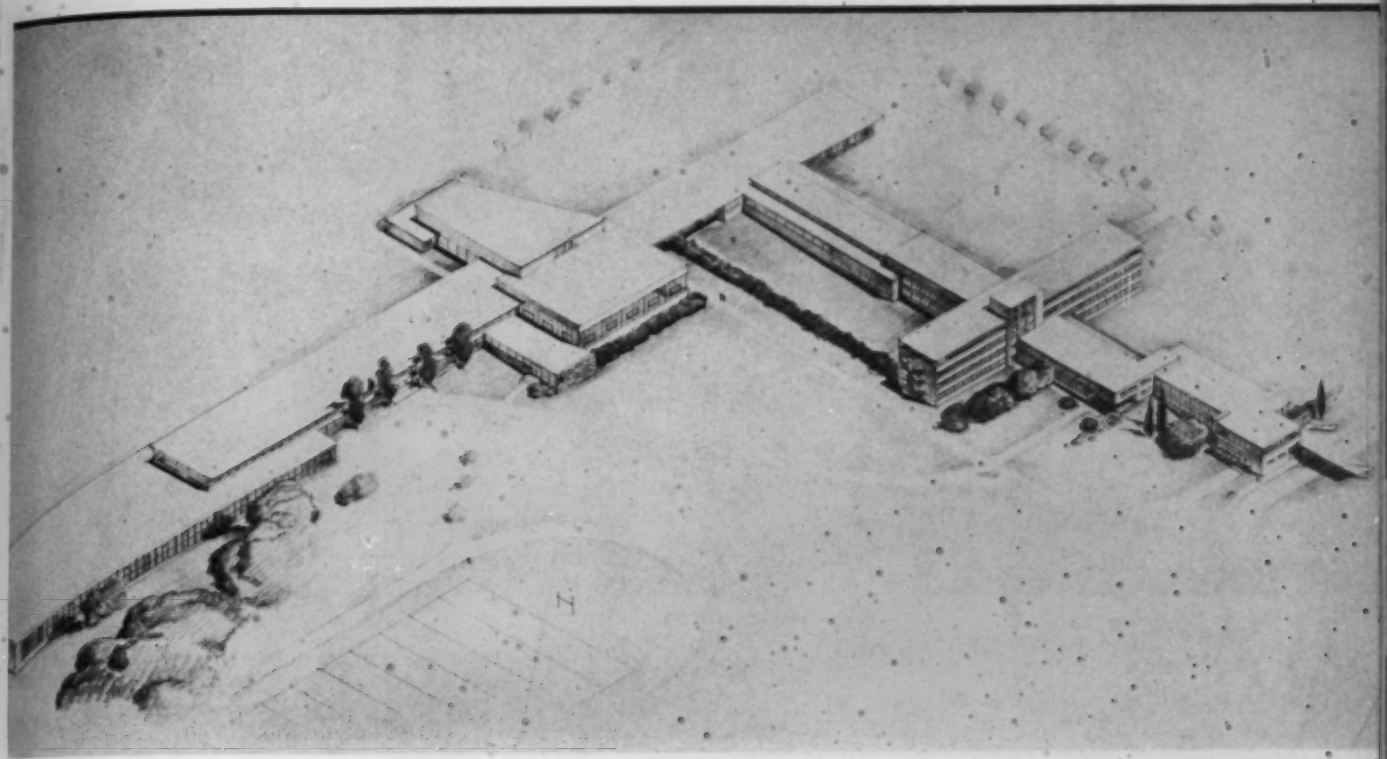
NEW YORK STATE AGRICULTURAL AND INDUSTRIAL SCHOOL *Industry, N. Y.*

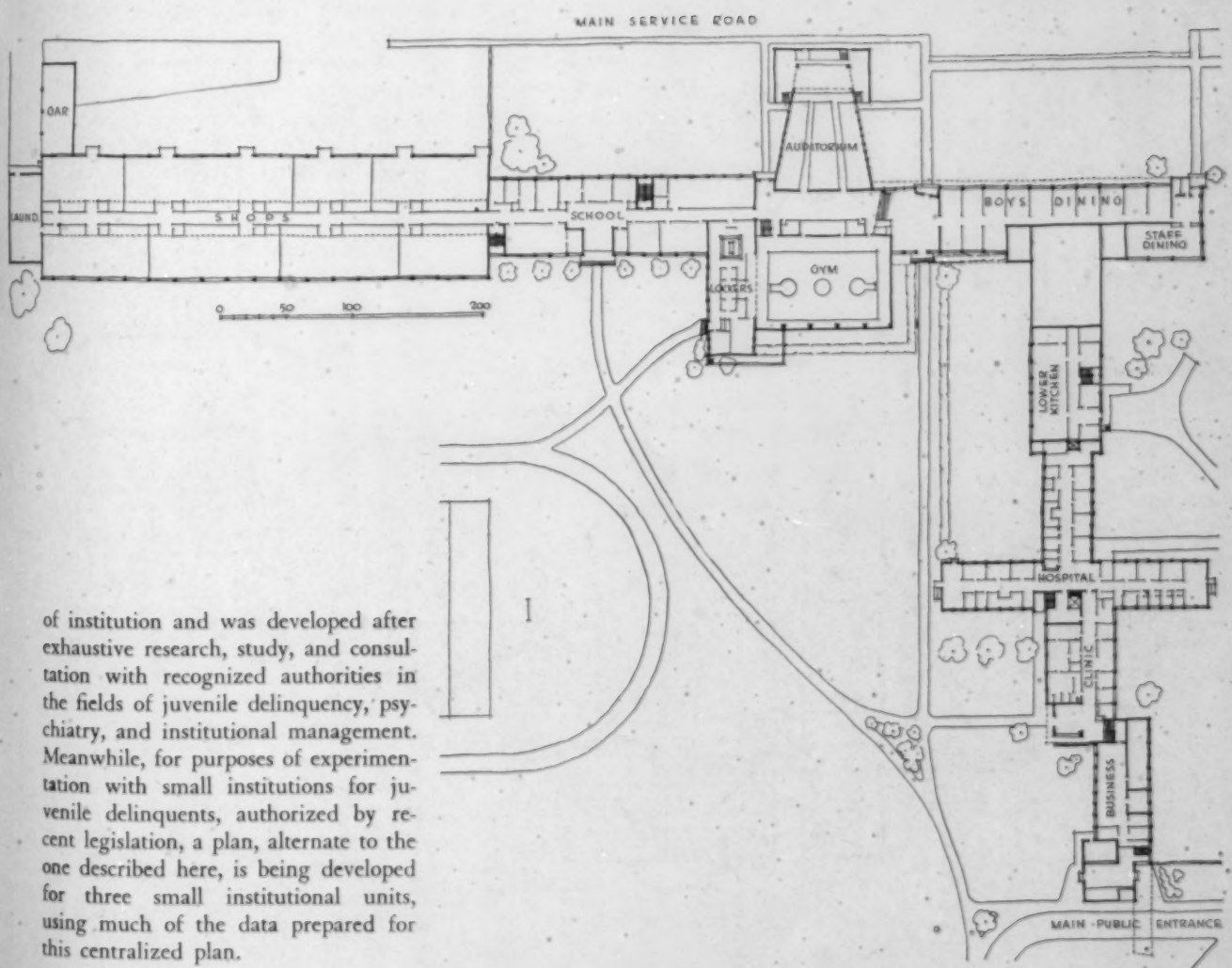
Kahn and Jacobs, Architects

THIS PROJECT, proposed for the New York State Agricultural and Industrial School at Industry, N. Y., centralizes all facilities with living quarters for 450 male juvenile delinquents. It represents the present ultimate in this type



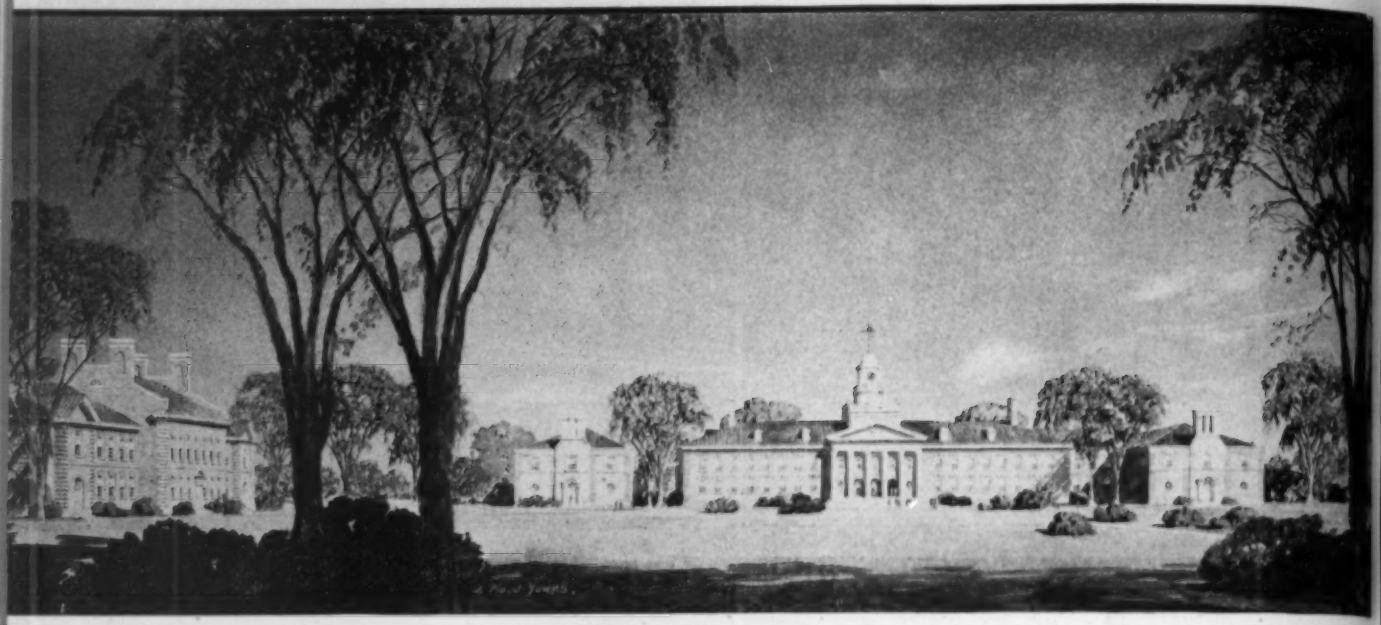
Projects of the Postwar Public Works Planning Commission



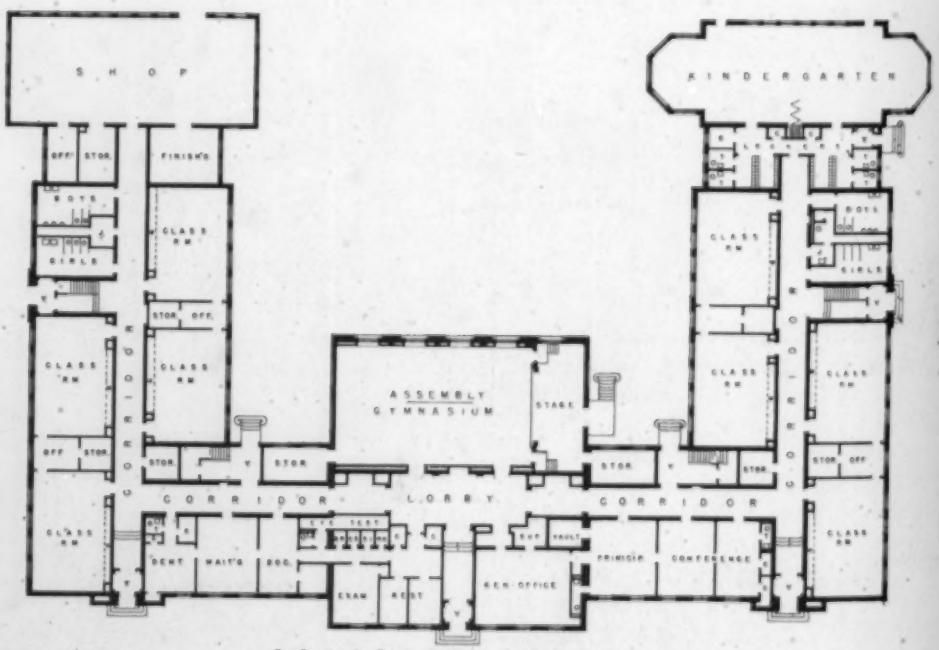


of institution and was developed after exhaustive research, study, and consultation with recognized authorities in the fields of juvenile delinquency, psychiatry, and institutional management. Meanwhile, for purposes of experimentation with small institutions for juvenile delinquents, authorized by recent legislation, a plan, alternate to the one described here, is being developed for three small institutional units, using much of the data prepared for this centralized plan.

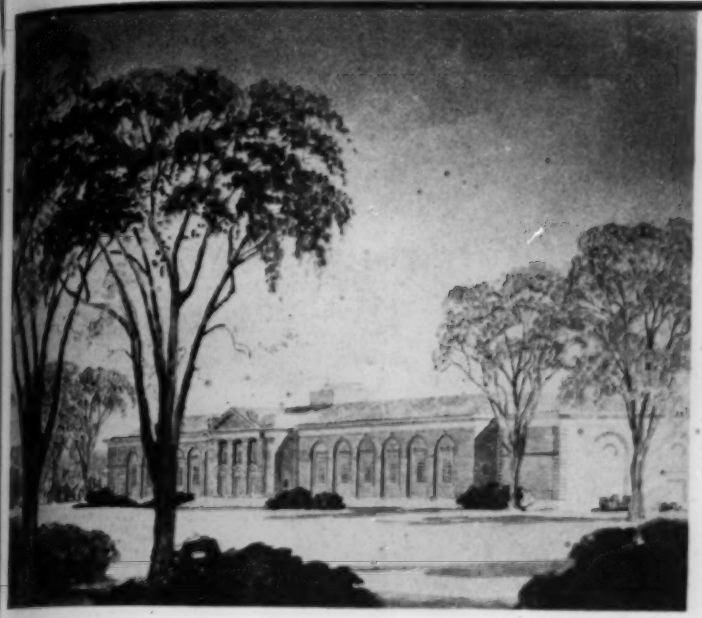
NEW YORK STATE'S PLANS ARE READY



DEVELOPMENT of a complete, modern plant at the State College for Teachers at Fredonia, established in 1866, will be consummated with completion of a group of buildings, including an administration and classroom building with library, a gymnasium auditorium building, and a campus school of practice. These new buildings will provide this college the necessary classrooms, science laboratories, a small auditorium for the use of the speech and dramatics department, student activity room, an auditorium, a gymnasium with a swimming pool, and a 24-room campus school of practice to house 400 elementary school pupils. The first unit of the new plant was a $325,000 music building erected in 1938.



PRACTICE—SCHOOL
PLAN OF FIRST FLOOR

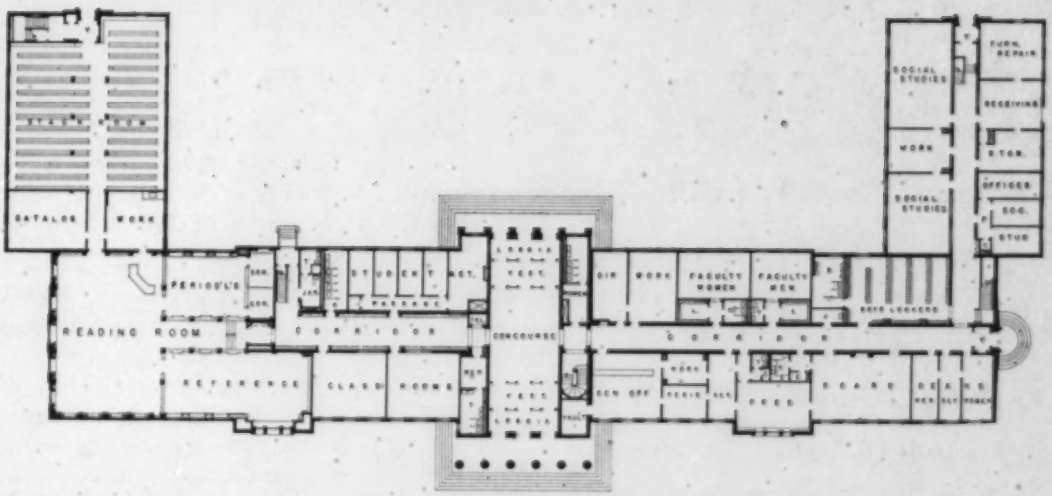


NEW BUILDINGS

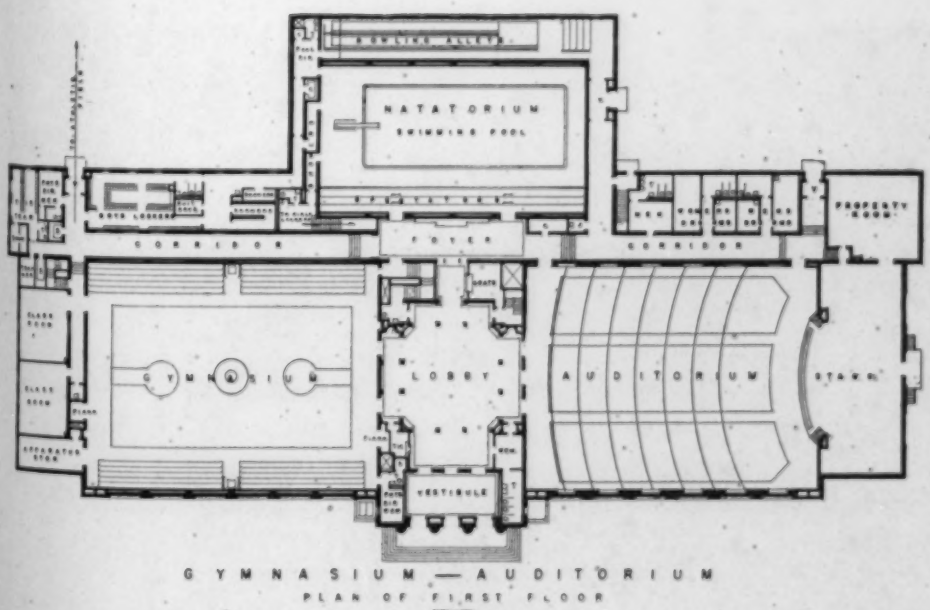
STATE TEACHERS COLLEGE

Fredonia, N. Y.

Tooker and Marsh, Architects

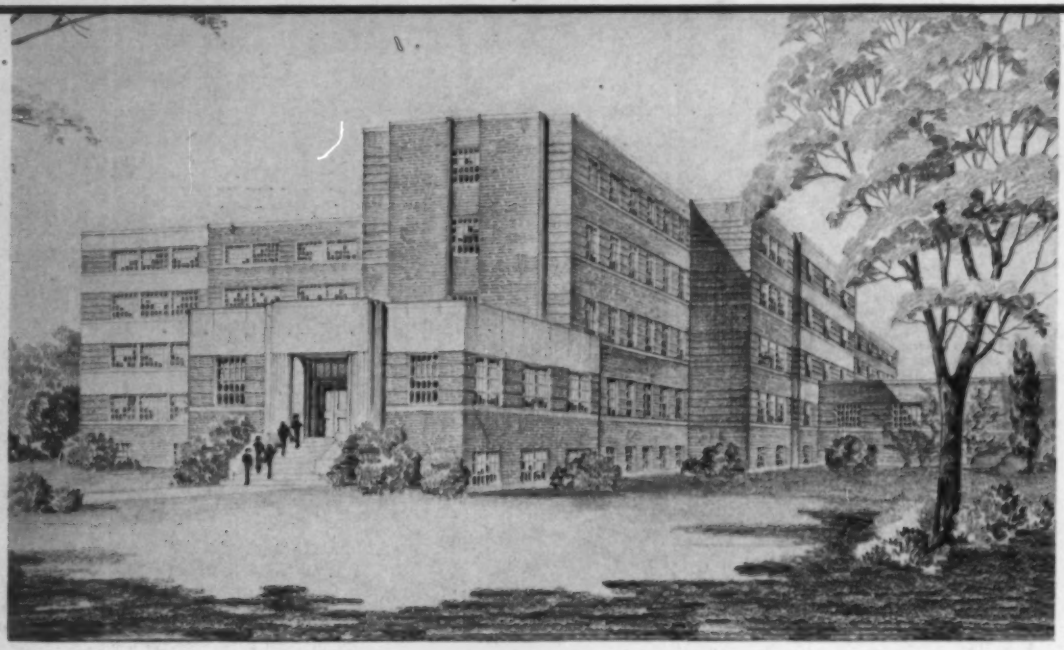


ADMINISTRATION
PLAN OF FIRST FLOOR



GYMNASIUM — AUDITORIUM
PLAN OF FIRST FLOOR

NEW YORK STATE'S PLANS ARE READY



ISOLATION BUILDING FOR BOYS

Rome State School, Rome, N. Y.

Bagg and Newkirk, Architects

AN ISOLATION BUILDING for psychopathic boys is approved for construction at the Rome State School, an institution for the care, treatment, and training of mental defectives. This will accommodate 160 boys in four wards, relieving a serious condition of overcrowding. Isolation facilities presently are provided in an old, inadequate structure.

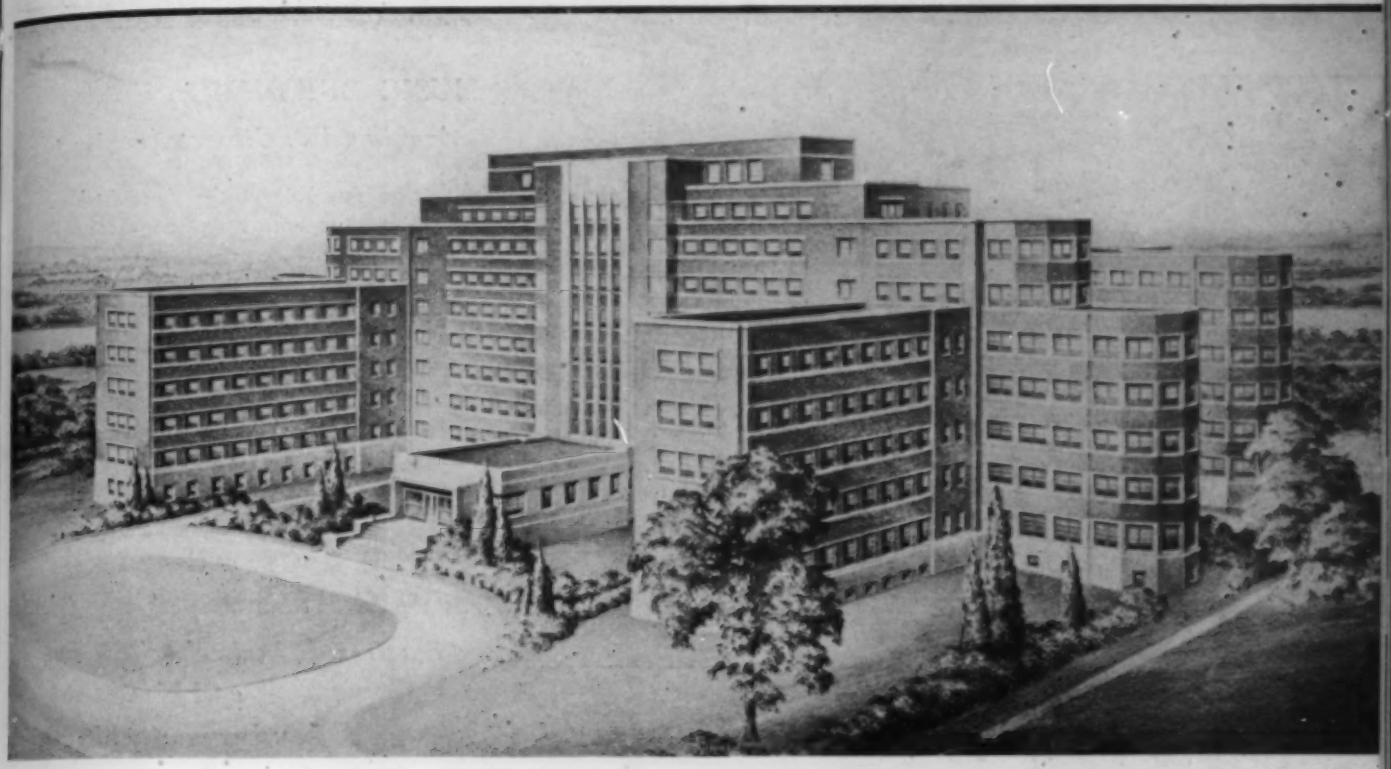
NEW LIBRARY BUILDING

State Teachers College, Buffalo, N. Y.

James W. Kideney, Architect

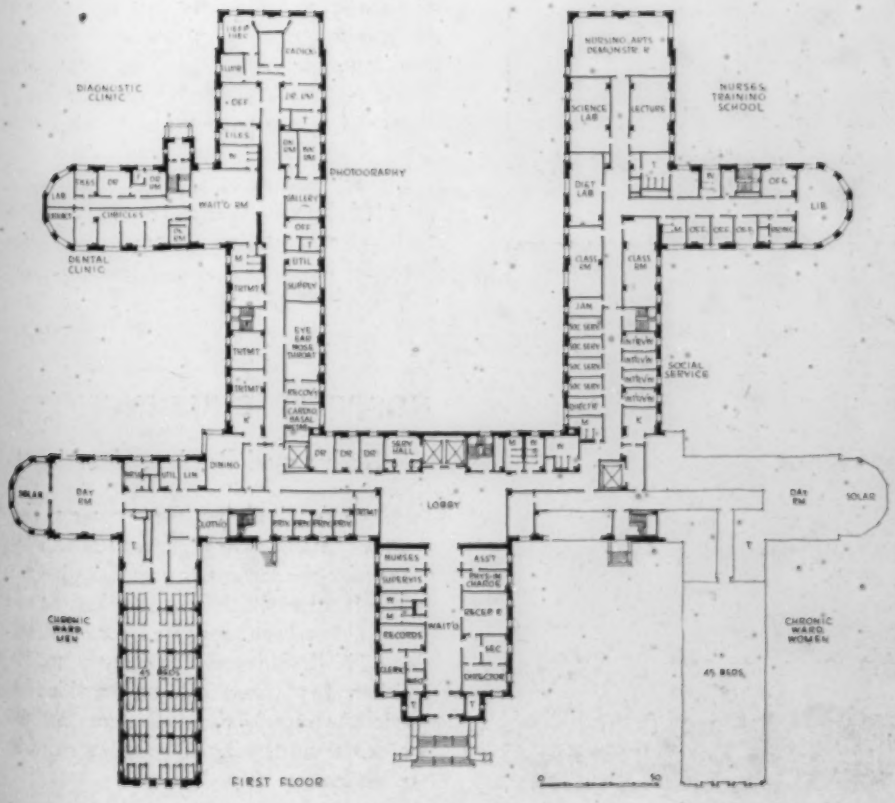
A NEW library building will provide adequate facilities to implement the general, special, and technical course offerings of the college. This building will include a main library room for 300 students, reference book room for 200 students, periodical reading room for 100 students, three seminar and study rooms, a map room, and an instructional materials laboratory. It includes, also, general administration and work rooms.

Projects of the Postwar Public Works Planning Commission



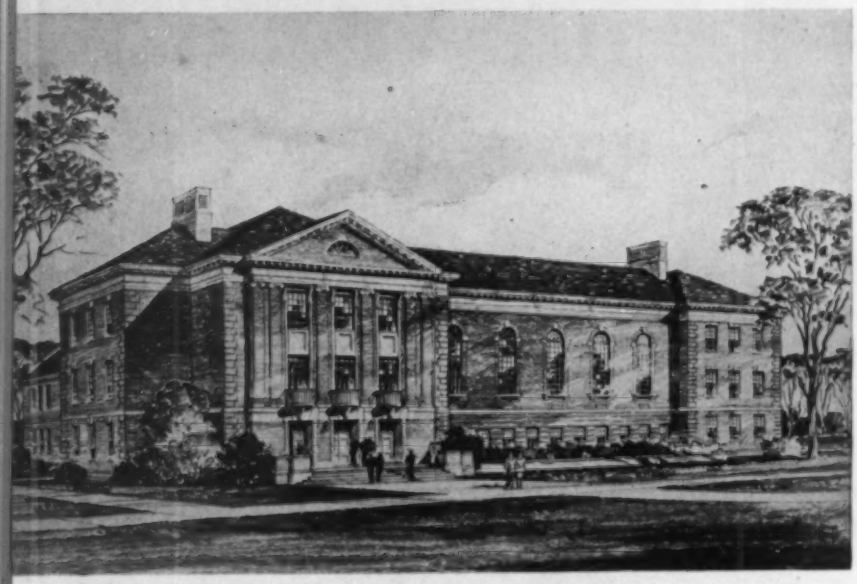
MEDICAL AND SURGICAL BUILDING, HUDSON RIVER STATE HOSPITAL

John B. Peterkin, Architect



At the Hudson River State Hospital, an institution for the mentally ill at Poughkeepsie, will be added a medical and surgical building. It will have twenty-two wards with facilities for 960 patients. This new structure will permit centralization of reception, medical, and surgical services. Although new laboratory services are not provided, the most advanced and scientific facilities will be available for shock therapy, in addition to the regular medical and surgical services. Quarters will be available for sick employees. The overcrowded condition at the Hudson River State Hospital, which has a population of 5,088, will be alleviated.

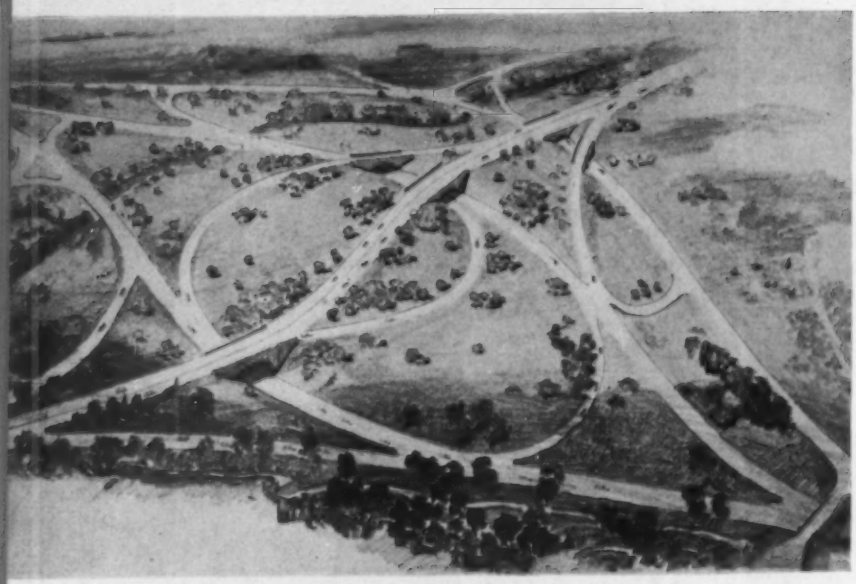
NEW YORK STATE'S PLANS ARE READY



MUSIC BUILDING

Archibald F. Gilbert Architect

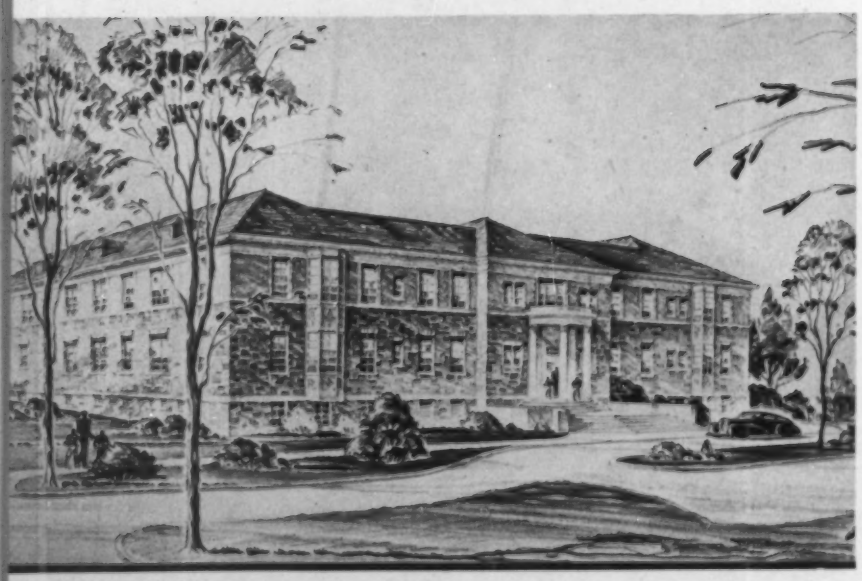
A MUSIC BUILDING at the State College for Teachers at Potsdam will make available modern and adequate facilities in the field of public school music. The building will include choir, orchestra, band, and rehearsal rooms, studios, practice rooms, a small auditorium for public performances, a music library, eight classrooms, and the necessary administration and auxiliary rooms.



GRADE CROSSING SEPARATION

Parsons, Brinckerhoff, Hogan and McDonald, Landscape Architects

To relieve traffic congestion on four main arteries which converge with a fifth at Hawthorne Circle in Westchester County, the New York State Public Works Planning Commission has approved the Department of Conservation's plans for separation of existing grade crossings. The separation will relieve clogged conditions and will eliminate a dangerous traffic hazard from the Taconic Parkway, the Saw Mill River Parkway, the Bronx River Parkway, a State highway, and Broadway, which converge here. This is in the five-year construction program recommended by the Superintendent of Public Works to conform the State's transportation system to the commercial, industrial, and recreational demands of the State.



HOSPITAL BUILDING

Kohn and Butler, Architects

A HOSPITAL building for younger children at Letchworth Village, a State institution for the care, treatment, and training of mental defectives, located at Thiells, has been approved for construction. This building will accommodate 100 children for whom will be provided all services, except kitchen. Present facilities for this type of care of younger children are inadequate.

Master plans for master politicians

By George Howe,
Retiring Deputy Commissioner
Design and Construction,
Public Buildings Administration

Illustrations by Robert Osborn

I HAVE OFTEN had occasion to seek for an answer to the question, where do architects and planners stand today? Let me be more specific. I am concerned with the position of the architect-planner as distinguished from other planners, and his relation to that over-all planning which is inseparable from government action at all levels.

First let's consider where planning in general stands today. Planning stands about where alchemy stood in the seventeenth century. On the basis of a still unorganized science—the science of government planning—it promises wealth, health and happiness. Even its operative symbol is reminiscent. As elements of the "project," the *opus,* we have first the "new material," shall we say *materia prima,* and then its transmutation into social satisfaction and economic benefit, shall we say the philosopher's stone and liquid gold?

This comparison is not intended as ridicule. It is well known that alchemy was inspired by high purpose and served a useful one. You will recall Carl Jung's chapter on the "Idea of Redemption in Alchemy" as a part of the unending struggle of the collective unconscious to emerge into the light. The necessary qualifications of a good alchemist as set down in the *Liber Perfecti Magisterii* would fit a good architect-planner about as well. "He must have a subtle mind and possess a sufficient knowledge of the metals and minerals. But he may not have a coarse and hard mind, nor may he be greedy and avaricious, undecided and vacillating; furthermore he may not be in a hurry, nor may he be conceited; on the contrary, he must be firmly resolved, tenacious, patient, mild, long-suffering and moderate." The best among these paragons were conscious of the obstructive complications of their laboratory operations. One of their sayings was, "Thou seekest hard and findest not. Perhaps thou wilt find if thou dost not seek." It sounds rather like one of Frank Lloyd Wright's jabs at Moses the Mole.

When chemistry became a science, the alchemist became an experimental chemist. When government planning becomes a science, the architect-planner may become an experimental government planner. That time has not yet come.

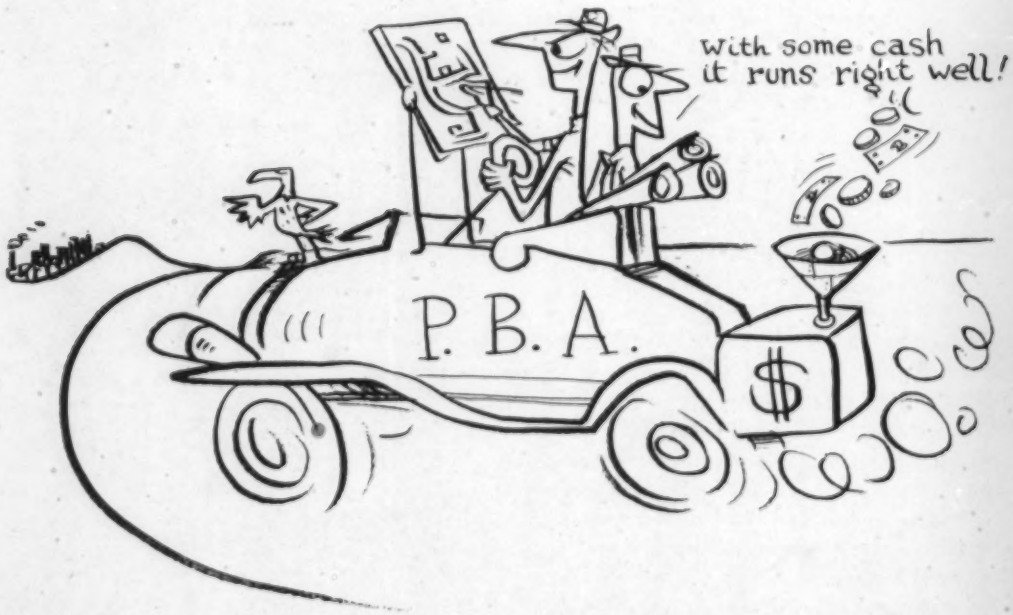
Government planning has only gone a short way toward becoming a science. Of its three modes of action, political, legislative and administrative, the first is an imaginative art, the second is the projection of concepts as formulae and the third is the building of laboratories where formulae can be tested and enlarged. Imagination has not gone far enough in government planning. We cannot yet clearly formulate our ideas nor build laboratories to test them.

The architect-planner is faced by a double necessity. As artist his imagination must run ahead of reality. As technician he must work with texts and in laboratories that seem to him, and are, inadequate. In whatever one reads about planning it is obvious that imagination is hampered at every turn by the insufficiency of legislation and administrative machinery. Political action must be the architect-planner's first interest.

Administrative and technical agencies are of course themselves fully conscious of the need for enabling legislation but even so they can consider it only under legislative authority. Fortunately the need of appropriations for planning is now recognized. You may be interested to hear something about the Advance Planning Program of the Public Buildings Administration which was authorized by Congress in 1943. This research into requirements, standards and procedures in government construction was confined primarily to public buildings as such but it is impossible to consider these without relation to public roads, community facilities and planning problems in general.

The results of the studies covering these related parts of the research program are contained in the "Statement of W. E. Reynolds, Commissioner of Public Buildings, before the Public Buildings and Grounds Committee of the House of Representatives" under the title "Post-War Urban Redevelopment" which some of you have probably seen. It is a clear, concise and comprehensive recapitulation of urban planning problems in their social, administrative and economic aspects, and definitely states his opinion on national responsibility with respect to them. "These problems are not insurmountable," he concludes. "We have the opportunity and we have the ability to do a good job of rebuilding our cities. We cannot avoid some national responsibility to do just that."

Studies of a tentative urban redevelopment pattern applied to a selected area were submitted with the statement as illustration. They pay special attention to the urgent problem of the relation to roads to densely inhabited areas. Express highways connecting through routes, at present interrupted, are interlaced with the existing street pattern of a whole city



leaving the healthy areas intact. The areas ripe for redevelopment are divided by these highways into neighborhood super-blocks, accessible only at fixed points, penetrated by a new, graduated system of traffic arteries and provided with complete community facilities. The proposal, based on already accepted principles, is at once realistic and daring.

In the field of existing legislation and administration you are certainly aware that a great deal of valuable experience has been gained during the war in providing community facilities in collaboration with local agencies, architects and engineers through the War Public Works Program au-

thorized under the Lanham Act and administered by the Federal Works Agency in which a Bureau of Community Facilities, headed by a Commissioner, has recently been set up by the Administrator on a parity with the Public Buildings and Public Roads Administrations to round out its operating organization. Recently too the Congress has authorized the Administrator under the War Mobilization and Reconversion Act to loan or advance funds to states and other non-federal agencies for the preparation of complete designs for public works, provided they conform to over-all state, local or regional plans under properly constituted authorities. No funds are as yet available for this purpose but it is anticipated they will be provided in the present year.

These developments promise well for the not-distant future. Out of legislative authority and administrative experience the necessary machinery for the realization of large-scale plans may well emerge. When it becomes effective, and I believe it may become so in the postwar period, the technical services of the architect-planner will be in demand. With this situation he might rest content, but he should not. He differs from all other planners, political, social, economic and legal, in one important respect. He is, as the name architect-planner implies, more of an artist than any of the others.

The inherent nature of art may preclude analysis but qualitatively it has been well-defined through its purpose in society by the philosopher Edgar Singer. "Only the art whose purpose is to change the purposes of the beings to whom it is addressed is fine ('free' or 'freeing') art," he wrote in his essay "Esthetic and the Rational Ideal," and again, "the artist must be a messenger of discontent," and again, "the artist creates no new ideals" (Singer refers to ideals external to art, let me interpolate); "he creates the creators of ideals." Obviously this is not the facile art of the eclectics and the city beautiful.

It is rather the fashion nowadays to scoff at plans that are not practical. By practical plans presumably are meant those that fall within the immediate or not too remote social, political, economic and legal possibilities. In an article on "The Political Art of Planning" Dean Hudnut last year made scholarly fun of the master plans buried in the Planning Library at Harvard. Yet it is obvious from a recent controversy in the public press that even the most modest proposals of architect-planners are beyond the scope of the practical-minded. Nor is it recorded that they ever liked artists any more than they like them now. They sent Phidias to jail for his part in directing the public works of Pericles, and Baron Haussman, who carried out Napoleon III's plan for a city supposedly safe from the fury of mobs and external enemies, had no use at all for architect-planners. "As artists," he wrote, "they had little concern for expenses. I might add that in general they possessed neither the knowledge required for drawing up an estimate nor the careful and detailed attention which is needed for checking a bill."

Architect-planners resent these still-current imputations but they must admit that others who are not architects can prepare estimates and check bills at least as well as they. These others have the further advantage in the eyes of the practical-minded that they do not raise difficult questions, questions of human values, questions of esthetics—all sorts of questions about

things which, as the respectable citizens of Athens complained of the works of Pericles, "cost a world of money." These questions it is the function and duty of architect-planners to raise.

There are two great showmen living and working today who are also great architect-planners. Each has produced a planning pattern to meet the challenging problem of how to tie the pattern of speed and power represented by the New York Parkway system and the Tennessee Valley project into the pattern of human living. Each foresees a different solution. The American of the plains prophesies the abandonment of rurification of the city, the European on a crowded continent prophesies its rebuilding.

Their plans have one great quality in common. Though they purport to be founded on present realities, their chief claim to fame is their splendid disregard for all practical impediments to their execution. They transcend the momentary limits of social, political, economic, and legal possibility, and yet, or perhaps therefore, their authors are better known to the world at large than any of their fellows. Nor are their plans buried in Planning Libraries. They are very much a part of the art of political action. I am speaking of course of Broadacre City and the 1922 Plan of Paris, and of their authors, Frank Lloyd Wright and LeCorbusier.

With lip and pen and picture these two have tirelessly stated the cause and the case of the architect-planner, always with emphasis on the role of the artist in society. I venture to state that their impractical plans and words have done indirectly as much as all the practical together to bring the legislative and administrative machinery of planning to the point it has reached today.

In the hope that you may have forgotten it and at the risk of seeming frivolous I am going to recall the story of Dinocrates told by Vitruvius in one of the amusing introductory passages that lard the lean meat of his technical treatise. I offer it, as you will see, only by way of parable.

Dinocrates was an architect-planner of the time of Alexander the Great who anticipated by twenty-three hundred years Salvador Dali's personal publicity stunts and the popular appeal of Gutzon Borglum's images carved out of mountains. He had a city plan to propose to the king and approached him at first with the usual letters of introduction to important personages. As still so often happens, they put him off with fair promises until his patience was exhausted and he decided to attract attention to himself in his own way. Vitruvius thus tells what he did:

"He was, I should state, a man of tall stature, pleasing countenance, and altogether of dignified appearance. Trusting to the gifts with which nature had thus endowed him, he put off his ordinary clothing, and having anointed himself with oil, crowned his head with a wreath of poplar, slung a lion's skin across his left shoulder and carrying a large club in his right hand, he sallied forth to the royal tribunal, at a period when the king was dispensing justice. The novelty of his appearance excited the attention of the people; and Alexander, soon discovering with astonishment the object of their curiosity, ordered the crowd to make way for him and demanded to know who he was. 'A Macedonian architect,' replied Dinocrates, 'who suggests schemes and designs worthy your royal renown. I propose to form Mount Athos into the statue of a man holding a spacious city in his left hand, and in his right a huge vase, into which shall be collected all the streams of the mountain, which shall thence be poured into the sea'."

On making inquiries among his economic and industrial advisers Alexander discovered that the site of Mount Athos was utterly unsuited to the life of a city but he was so delighted with Dinocrates and his proposal that he kept him thereafter constantly by him. When he came to Egypt this favorite architect-planner was commissioned to lay out Alexandria.

I do not suggest that an architect-planner could achieve this happy result today by imitating Dinocrates in any literal sense. I would only point out that a bold plan, dramatically presented, is one of the most powerful instruments of political pressure in the hands of any section of society. Furthermore, such a plan may bear fruit at a season and in a form not foreseen by its author.

By way of contrast I submit the fruitlessness of Vitruvius' method of approach. He failed to read the lesson of his own story. "Dinocrates," he said, "obtained this honor through his comely person and dignified de

portment," and then went on to present his own qualifications of employment, presumably to Augustus Caesar, in the following terms: "But to me, Emperor, nature hath denied an ample stature, my face is wrinkled with age, and sickness has impaired my constitution. Deprived of these natural accomplishments, I hope, however, to gain some commendation through the aid of my scientific acquirements, and the precepts I shall deliver." As with Dean Hudnut's dusty dons it is not told that he ever produced anything but a thesis on planning, design and construction.

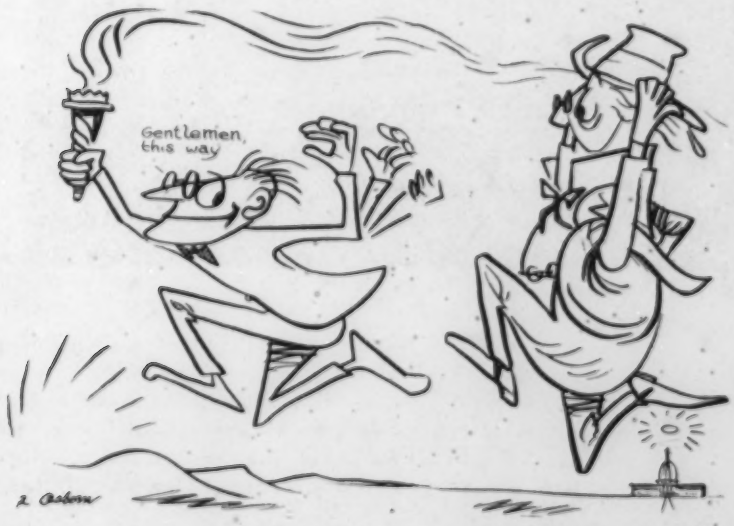
So it seems to me, in the light of recent experience and old story, the architect-planner can best serve himself as well as society by standing frankly on his function as artist, as "messenger of discontent," as creator of "the creators of ideals." As artist he cannot but stand or fall by master plans for master politicians.

In support of the power of the plan as a weapon of political action, on condition that it be boldly promulgated and promoted, I recall to your minds the words of an English legislator published in the London *Architectural Review* something over a year ago under the title "The Politics in Planning." Sir Richard Acland, member of Parliament and founder of the Commonwealth Party, is no totalitarian but he believes that collective political action by free democratic consent must go much farther in fact than it goes now even in our thinking if planning on a broad scale is to become a reality within the lifetime of any infant now living. He points out that any architectural plan of any scope is in fact a revolutionary manifesto. He reproaches architect-planners for their timidity in failing to recognize the revolutionary implications of their own planning philosophy. He urges them not to be afraid to state its inevitable political consequences. Every plan, he concludes, should be issued with the following words: "These are the towns which you can have if you want them and if you make up your minds to reject all the basic principles on which your society is founded."

This is a stronger statement than most men are prepared to make in this country. I cite it to bring out the position of the architect-planner. He stands between two extremes: between the reality of existing planning legislation and administrative machinery, which are acknowledged to be inadequate, on the one hand, and the consequences of his own planning philosophy, which carry him far into the realm of political imagination, on the other.

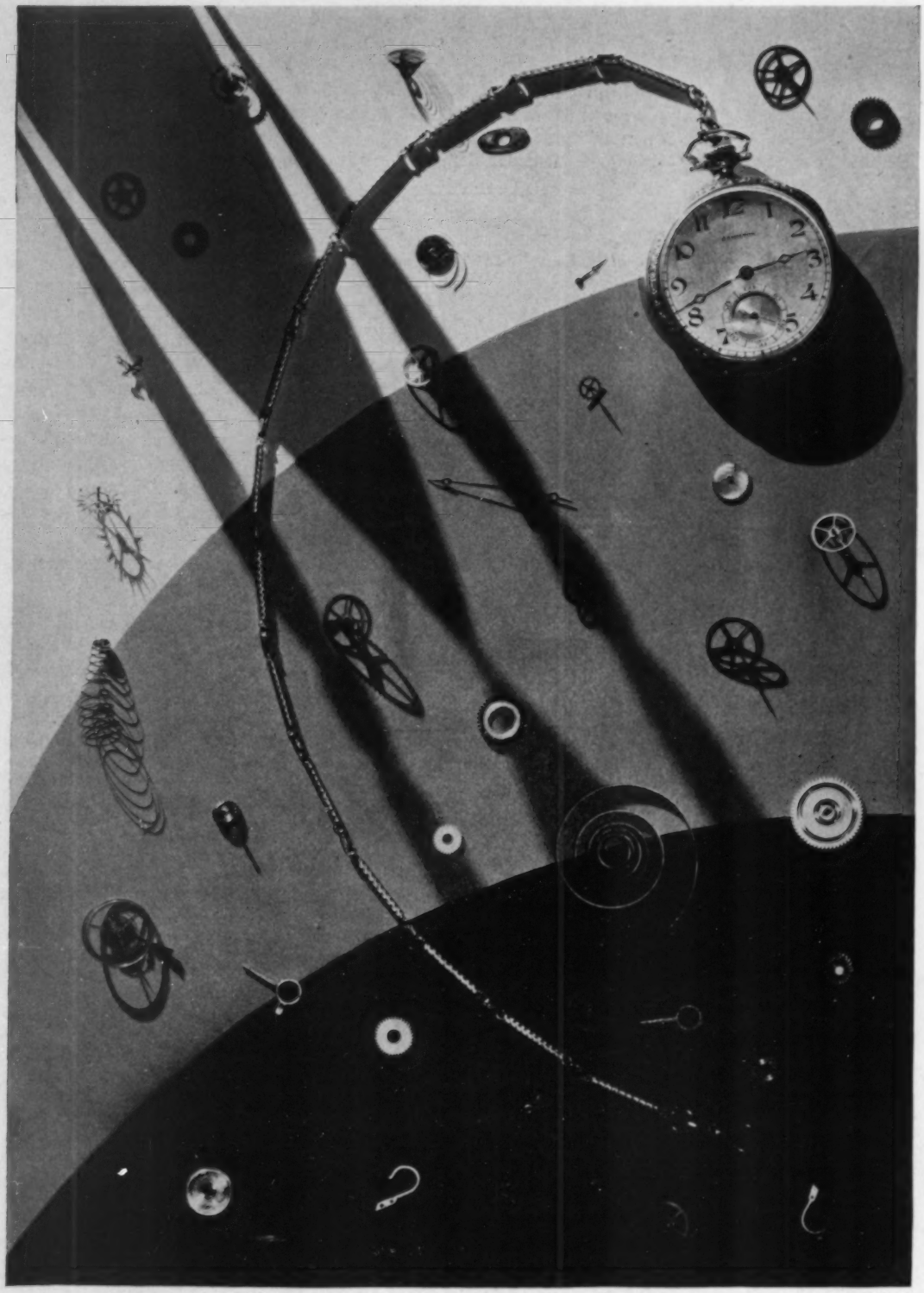
This realm is peculiarly the architect-planner's. Others whose business it is can work out details of legislation and administration as well, I will venture to say better, than he. Only he can present the image of the end toward which these working instruments are directed. Only he can provide the statesman with graphic projections of the still impossible, leading to imaginative political action that will set the machinery moving. Whatever else he does, this he must continue to do.

He must provide master plans for master politicians.



DESIGNING WITH FLUORESCENT LIGHTING

By Dr. Matthew Luckiesh



Any visual task involves four fundamental factors of visibility: (1) the size of the details to be seen; (2) the brightness-contrast *between the objects and their background; (3)* brightness *of the objects, which varies with footcandle level; (4)* time *required to see. From "Light, Vision and Seeing," by Matthew Luckiesh, D. Van Nostrand Co., N. Y.*

Part I: Possibilities and Problems in Lighting Industrial Buildings

Director, Lighting Research Laboratory, Nela Park, Cleveland

EVERYWHERE in the world of industry the taste, understanding and ingenuity of the architect are needed if the relatively unlimited possibilities of fluorescent lighting are to be adequately practicalized.

In the past decades of filament lighting, the ability of the architect was challenged only by the occasional interior. For the most part his problems in artificial lighting were confined largely to providing the wiring and outlets and to the selection of ready-made lighting fixtures. There were relatively few opportunities for ingenuity and creative ability, particularly in the work-world. But the advent of fluorescent lamps has opened a new era.

Artificial lighting is no longer confined to hanging individual fixtures on ceiling outlets. Structural details in new buildings can be the "fixtures." The architect can make structural forms serve the additional function of reflectors or luminous areas. In offices, drafting rooms and elsewhere, desirable impressions of extent, expanse, order, neatness and smoothness can be realized by lines, areas and patterns of light flush with the ceiling. Even in old industrial interiors the architect can lead troughs of light continuously in lines, curving around corners or combining in patterns, symmetrical and consistent with the work-spaces and with the interior structure.

Fluorescent Lamps Provide Impetus

The influence of a science of lighting, which has been evolving from the science of seeing, was already evident when filament lamps were still the dominant light-sources. However, with the advent of fluorescent lamps, the floodgates of opportunity were opened wide. The new luminous era became an extensive and practical reality. The luminous efficiency of these new sources was initially more than twice that of filament lamps. They provided relatively *cool* footcandles. The amount of energy accompanying each footcandle is only about one-fourth that accompanying each footcandle provided by filament lamps. Fluorescent light upon the work and worker is comparable in coolness with natural light. For the first time in the course of light production, efficient and effective control of the color of artificial light became possible. World War II interrupted developments, but it can be safely predicted that in all these respects further progress is in the offing.

Filament lamps are not bowing off the stage. Their relatively small and brilliant light-sources make possible the optical control of light for a variety of purposes. However, fluorescent lamps with their relatively low brightnesses, large light-sources, coolness of light, and color quality which blends with daylight, will dominate the work-world. They provide opportunities for ingenious structural lighting, desirable area lighting, and satisfactory space lighting which provide adequate light for critical seeing over long periods.

Good Seeing Conditions

Seeing is a very complex matter which not only involves the task to be performed and the relationships of light and sight. It involves brightness not only of the task but also of the immediate and general surroundings. Furthermore, the seeing conditions should be such that not only is seeing easy and comfortable at the moment, but over long periods of prolonged critical seeing. Here the major principles are merely stated but they are discussed in connection with illustrations selected for the purpose.

The dividends from better seeing conditions are paid not only in increased production and safety and in decreased waste of time and materials. Such benefits are more or less obvious and immediate. Less apparent, but of even greater importance, is the waste of human resources, such as eyesight and energy, as the days and years pass. The efficiency of a worker is not measured merely by the useful work he does per hour or per dollar. It is properly measured in terms of his expenditure of his own human resources. He is most efficient as a human seeing-machine when the waste of his resources is reduced to a minimum. Better lighting for easier seeing not only influences production, spoilage and safety today; its contributions to the conservation of human resources, to human welfare and to human progress extend far into the endless procession of tomorrow.

The objectives of lighting and seeing conditions can be simply stated if not easily attained:

1. Maximum visibility of the object to be seen or of the visual task to be performed.

2. Maximum comfort of the observer (worker) at all times and, more broadly, maximum ease of seeing when critical seeing is being done.

The term, comfort, is here used in an extended sense. It means more than the absence of obvious discomfort, for it includes effects of seeing which cannot be appraised introspectively but which combine to produce some degree of ease of seeing.

The minimum requirements that should be fulfilled by a lighting installation are briefly:

1. There must be a sufficient quantity of light (footcandles) on the object to be seen or on the task to be performed.

2. The light must be applied so that the distribution of brightness in the visual field does not cause unnecessary annoyance or discomfort. This involves the elimination of preventable glare from light-sources and the proper reflection-factors of surfaces obtained by paint or other finishes.

Reduced to its fundamentals, comfortable lighting and good seeing conditions depend chiefly upon three factors which should be borne in mind in studying any work-world environment. They are briefly:

1. *Footcandles on the seeing task.* The requirements in this respect vary enormously for various work-world tasks.

2. *Footcandles at the eyes of the worker.* These should be limited to a fraction of that on the work. Too much light on the eyes compared with that on the work definitely means unnecessary glare. The results are decreased visibility and increased annoyance and discomfort.

3. *Brightness of light-sources (or areas) and brightness-ratios in the visual field.*

1. Fig. 1 illustrates a very common defect of lighting installations in industrial places. The bright fixtures are seen against the dark background above. This background is dark for two reasons. Little light reaches it directly, and the reflection-factor is low. The ceiling, and generally the upper walls, should be painted white, and an appreciable amount of light should be permitted to escape upward. The resulting luminous background greatly decreases the brightness-ratio between the bright fixtures and their immediate surroundings, reducing the glare from fixtures in the visual field of the worker.

The sky outdoors greatly mitigates the glare of the sun, and it contributes light to the shadows. Of course the sun is too bright to be viewed with comfort, but on a hazy day the analogy is fairly satisfactory. Good lighting and seeing conditions indoors are produced by the equivalent of a luminous sky. Light and white paint (or its equivalent) on the ceiling are generally essential for comfortable seeing indoors.

1. *Illustrating some common defects of lighting: spottiness, shadows, dark ceilings and high contrast-ratios between fixtures and their background*

2. Although high brightness-ratios between lighting fixtures and the ceiling are more common defects in filament lighting, the same shortcoming is found among fluorescent lighting installations. Fig. 2 illustrates some improvement over Fig. 1 by supplying more footcandles at the work from sources of fairly low brightness. There is also an advantage of less harsh shadows due to the more extended light sources and fixtures. However, the ceiling is dark, with the result that the brightness-ratio between the fixtures and their background is too great for ideal seeing conditions. If a worker must be in such a position that the length of the room is in his field of view, and if he is looking in a horizontal direction, the footcandles at his eyes would be a rather large fraction of the footcandles on his work. This would indicate too much preventable glare. Plenty of light on the work and not too much light on the eye is a simple statement of an objective which is not always easy to attain. However, it must be attained if seeing conditions are to be satisfactory.

2. *This is some better, but there is still too much contrast with the dark ceiling, even though flourescent lamps are not as "bright" as filament lamps*

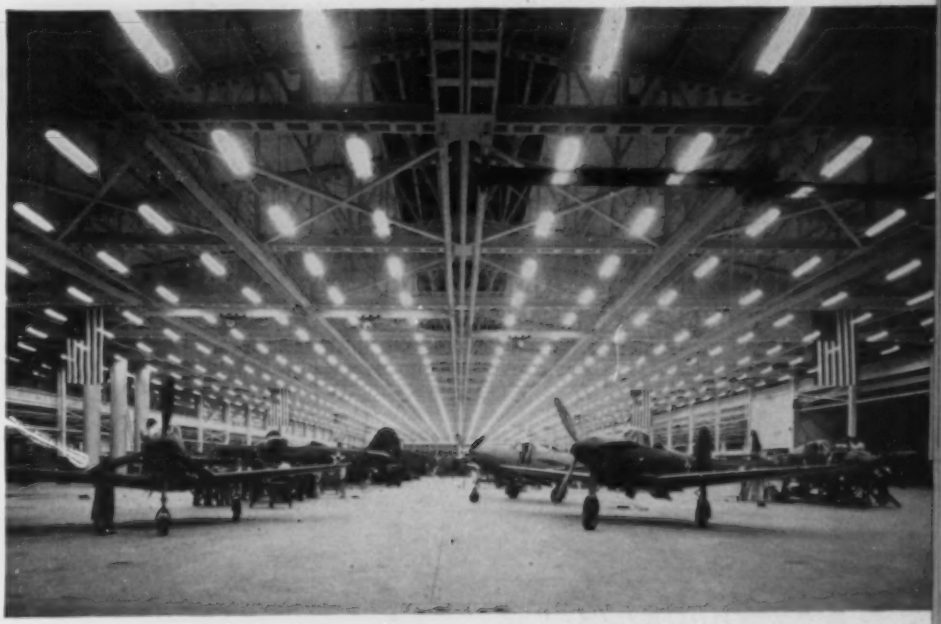
3. Naturally, with the advent of fluorescent lamps, lighting fixtures were adapted to utilize them. However, as the lighting industry began to sense the extended possibilities of these long light sources of low brightness, the old fixture traditions began to give way. An example of

an installation of fluorescent lamps without fixtures is illustrated in Fig. 3. Advantage was taken of the structural forms in the ceiling. These were not specially designed to be ideal for the purpose, but they illustrate the possibilities that are within the control of the architect. The resulting illumination on the theoretical horizontal work-plane was 85 footcandles after 1000 hours of operation.

This level of illumination is readily obtained with fairly satisfactory seeing conditions. A worker looking in a horizontal direction perpendicular to the ceiling beams is not confronted with bare lamps in most of his visual field. The lamps are screened from his eyes by the beams. The sides of the beams are painted white so that the ceiling appears to be an expanse of brightness intercepted at close intervals by the darker bands. This installation suggests what an architect might accomplish by designing the ceiling members so as to perform their major purpose as supports and still be ideal in form for the most efficient utilization of light. The sides of the recesses might be inclined more from the vertical or might be curved. The cross-section could be parabolic so that the light might be directed more generally downward. This would result in less light lost by multiple reflections in the recesses themselves.

If the sides of the recesses were properly sloped or curved, there is some advantage in using aluminum paint. Its characteristics are such that the apparent brightness of the sides could be reduced if desirable and still efficiently reflect the light generally downward.

3. *Structural elements serving as lighting fixtures illustrate design possibilities. (Installation at W. M. Welch Manufacturing Co., Chicago)*



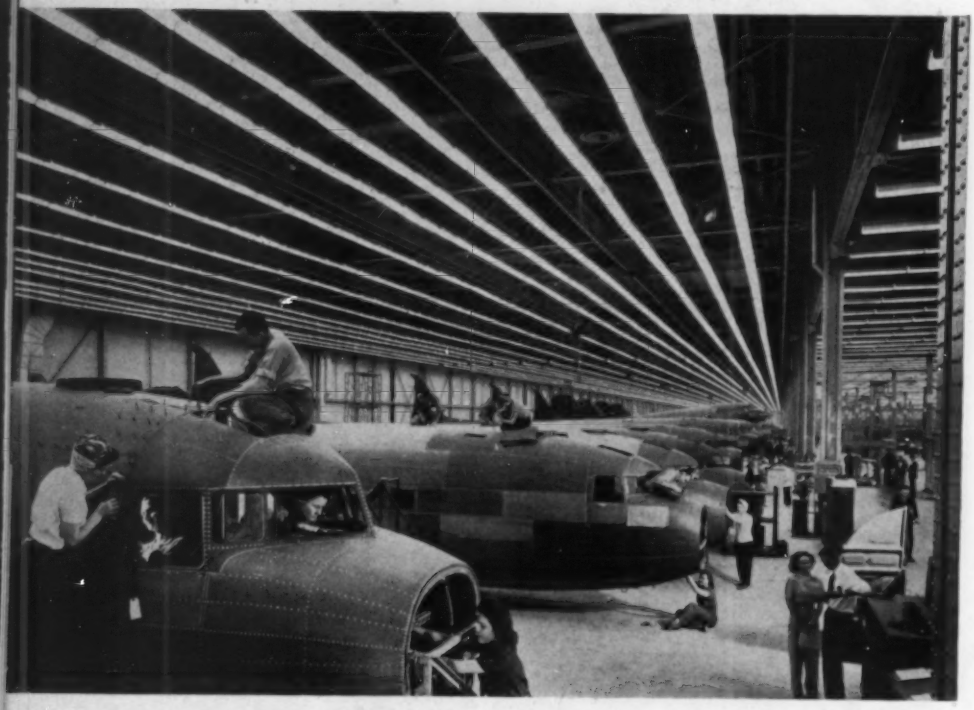
4. *In a large interior, with high ceilings, the fixtures should be hung as high as possible. (Bell Aircraft plant, designed by the Austin Company)*

4. In large interiors with very high ceilings many individual fixtures contribute light to a given work place near or at the floor level. The effect approaches, in some major respects, the lighting effect of a large expanse of uniformly bright ceiling. This is illustrated in Fig. 4. The floor is of concrete with a relatively high reflection-factor. This so-called white concrete is an excellent feature which contributes favorably to lighting and seeing conditions. The floor reflects some light to the ceiling and upper structure, which are properly painted white. This reduces the brightness-ratio between the fixtures and their background. These brightness-ratios are still too high to be ideal. Some lamps might well be installed so as to send their light to the upper regions. The reduction of these brightness-ratios is an important objective toward the realization of the over-all objective of comfortable seeing.

In a large interior such as illustrated in Fig. 4, the fixtures can be hung high without seriously reducing the efficiency of utilization of light. Actually, if a work-area is very large, the fixtures can be hung very high without any appreciable loss of light. This is a simple fact which is easily proved; it is surprising that so many persons believe that light is wasted in such interiors if the fixtures are hung high. Hung high, fewer of them are in the visual field of the worker. This reduces the foot-candles at his eyes, which is a partial measure of glare.

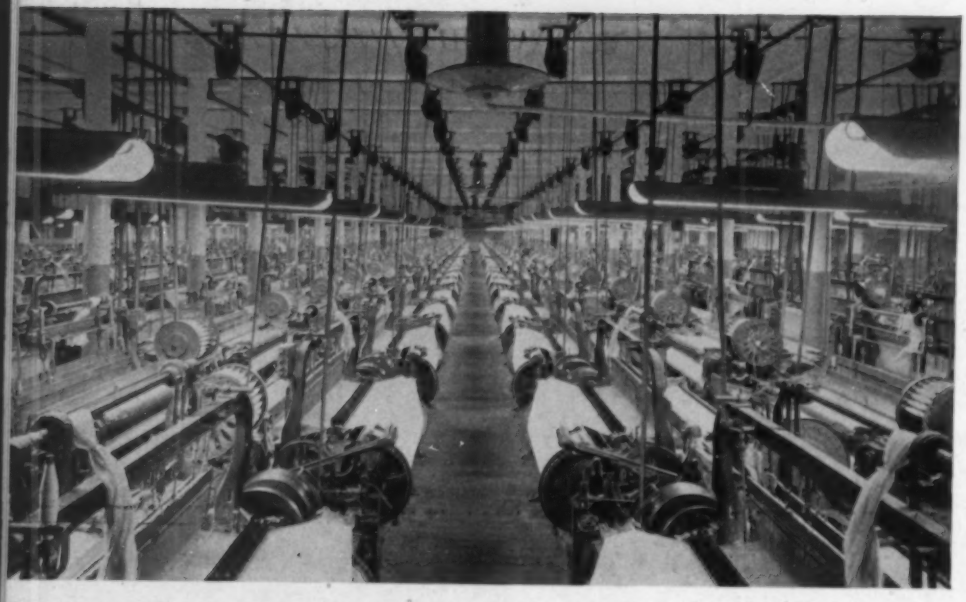
5. In Fig. 5 is illustrated a low-ceiling section of a windowless aircraft plant of enormous area. Here individual two-lamp fixtures were installed in continuous strips, with a sufficient number of rows to provide 55 footcandles throughout the horizontal work area. The floor is of so called white cement, which reflects a good deal of light upward, thus promoting both visibility and comfortable seeing. The result on the upper and vertical surfaces of the aircraft is a fairly "shadowless" illumination.

The result can best be appraised by recalling how satisfactory the lighting is outdoors in the shade of a building. The annoyance of shadows is reduced to a minimum and many work surfaces, regardless of their orientation, are well lighted. Of course, portable lighting units are necessary for critical seeing in the interior of the aircraft. The lighting and seeing conditions approach that of a natural skylight without the annoyance due to powerful sunlight in the latter case. Incidentally, the reflectors were made of pressed wood which was bent to a proper shape and coated with a synthetic white enamel. This illustrates another departure from the traditional use of metal reflectors. Architects may well bear this in mind in designing strips, areas, troughs and coffers to fit the location and routing of work.



5. *Close-spaced continuous strips of light in a low-ceiling area provide "shadowless" lighting approaching a skylight effect. (The Austin Company)*

Hedrich-Blessing Studios



6. *Acres of intricate machine parts and threads in this textile mill can be seen easily; ceiling lighted by reflection. (Mills Mill Co., Greenville, S. C.)*

6. Textile mills well represent the extreme condition where critical seeing must be done everywhere throughout acres of intricate machines. The results illustrated in Fig. 6 are a far cry from the seeing conditions in many mills with the spotty and shadowy lighting due to poor spacing of filament lamps. This is one of the first installations of the fluorescent-lamp era in textile mills. The fixtures were spaced at 8-ft. intervals and hung from the ceiling as shown. They supplied 40 footcandles to the critical work-areas. With the ceiling painted white, it is far from dark, due to the light reflected upward from the white textiles. However, eventually it will be recognized that, in such places where the ceiling can be maintained with white paint, it is not a waste of light to emit some

ight from the lamps directly upward. This reduces the brightness ratio between the fixtures and their background as seen by the workers, which results in increased visibility of the work and in more comfortable lighting.

7. Continuous strips of fluorescent light are illustrated in Fig. 7. The room is 152 ft. long and 50 ft. wide. There are 25 rows of metal troffers, each consisting of 12 4-ft. sections and each section containing a 40-watt, 48-in. fluorescent lamp. The level of illumination from the skein to the rack is 35 to 40 footcandles. By installing two lamps in each section, 75 footcandles are readily obtained. Here again it is seen that in designing such a structure it may be easy to provide places for continuous strips of artificial lighting. The installation as illustrated in Fig. 7 represents a great step away from spotty shadowy lighting of the dark era of not long ago. However, higher levels of illumination are still desirable and preventable glare can be still further reduced. It appears unnecessary to emphasize that the greatly improved seeing conditions inevitably pay large dividends in decreasing spoilage and waste of time. Furthermore, favorable effects upon the attitude, morale, safety, eyesight and expenditure of energy of the workers are inevitable. Workers *are* human beings and as such they cannot escape the favorable effects of favorable seeing conditions.

7. *This "great step toward daylighting" makes countless details fairly visible from most directions. (Installed at Uxbridge Worsted Co., Uxbridge, Mass.)*

8. *From the standpoint of seeing details regardless of their orientation, this lighting approaches that of outdoors in the shade. (Uxbridge Worsted Co.)*

8. A close-up of frame spinning is illustrated in Fig. 8. The rows of luminous troffers were spaced 6 ft. apart and in each row there were two continuous lines of 40-watt, 48-in. fluorescent lamps. The illumination at the upper rolls is 57 footcandles and at the lower rolls is 40 footcandles. On the vertical plane of the machine there were about 30 footcandles.

Although these levels of illumination are far less than outdoors in the shade, the lighting from the viewpoint of being able to see the various details regardless of their orientation is reminiscent of skylight outdoors in the shade. Imagine the ceiling of this interior to be tilted on one edge until it is vertical, leaving these intricate machines and processes exposed only to the outdoor skylight. It does not tax the imagination to visualize how easily all the moving threads and all the intricate parts of these machines could be readily seen outdoors.

9. In Fig. 9 is illustrated an advanced example of the use of fixtures in continuous strips and the proper use of paint as a powerful ally to lighting and seeing. With continuous luminous strips in two directions at right angles to each other, the elimination of annoying, harsh shadows is fairly well achieved by a general-lighting system. A large luminous area such as a skylight or the ceiling of an indirectly lighted room sends light to the work from many directions. This greatly reduces the shadows cast by the worker or by parts of the machinery upon the critical visual task. Where luminous strips are widely separated as in Fig. 9, the additional strips at right angles are helpful in reducing undersirable shadows. The illumination on the horizontal workplane is 85 footcandles.

In this case paints of proper reflection-factors are used on ceiling, walls and machinery. It has long been known that by painting appropriate areas of machines with white or other highly reflecting paint, seeing of the critical tasks and parts of machines is improved. This is due in part to the reflection of light by these areas and partly to the bright backgrounds against which the critical detail of the task is silhouetted.

9. *An excellent example of the use of light and paint to reduce harsh shadows. Criss-cross arrangement helps to minimize glare. (New York Trade School)*

10. *Better seeing, better safety, from painting machine parts white*

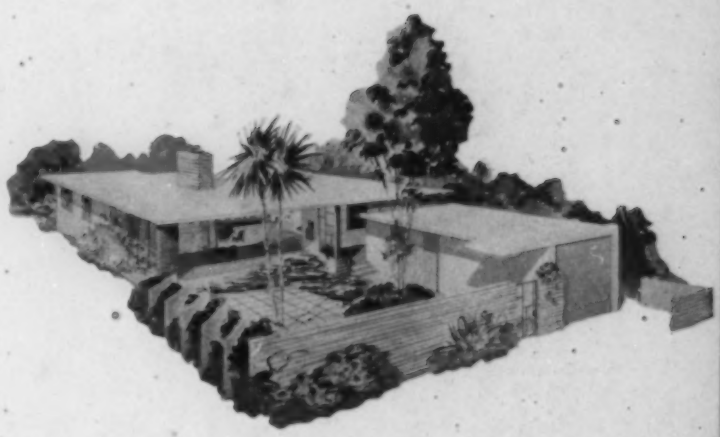
10. In Fig. 10, a close-up of a machine, with certain parts painted white, suggests something of the contribution made to visibility and easier seeing which results in better work and increased safety. Colored paint has some possibilities from a safety viewpoint, but one should avoid the confusion of too many colors. The use of color should be restrained and should be based on careful study of each case. Brightness is the major factor in seeing, but color can be used to delineate dangerous parts of machines. The color should have a fairly high reflection-factor in order not to lose the brightness-contrast advantage.

(To be continued)

HOUSES

Architectural Record's

Building Types Study Number 108



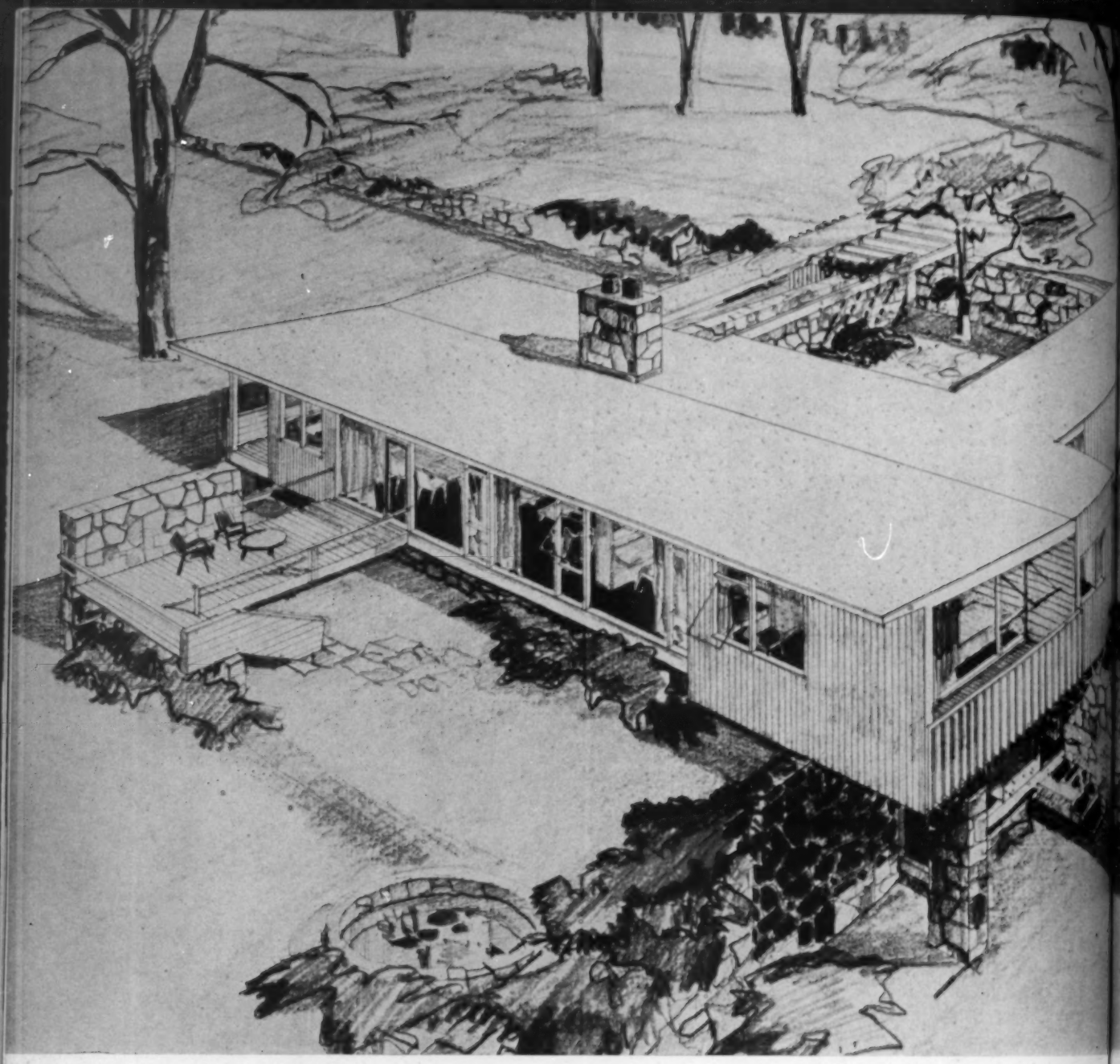
NORTH, south, east, and west, drawing boards are feverish with new plans today and many of them read, "A Residence for Mr. and Mrs. ———." New houses are needed in great quantity and new houses are going to be built. The subject is hot in more ways than one, however, because the house is probably the most contentious of all the architect's problems; sometimes it has raised more ructions than roofs. One conclusion is very evident now; there is no *one* over-all formula for the house in this country. Neither prefabrication of itself, nor flat roofed rectangles with solar heated, in-line rooms, nor modified Colonial schemes will supply the one solution.

On the following pages we show some recent work of outstanding residential architects in representative, particularly active parts of the country. These houses are moderate in size and modest in cubage but the designers have skillfully integrated the space at their disposal so that ample, enjoyable living facilities are provided, not mere minimum space. They've included the double duty rooms, the abundant storage space, the extension of the house to outdoor areas, and other features which literally expand the physical limits of the house. All are houses designed for specific clients, not post-war dreams, and they are tailored to their owners as well as to their sites.

Notable among them are the houses designed for three levels; at a time when building costs require space saving ingenuity as never before, the three level scheme provides the extra rooms and extra livability at not much over the cost of a one-story house. By staggering its floor levels this scheme gives living quarters ground level location, while sleeping quarters and basement recreation room or study gain the natural seclusion and quiet of a higher or lower floor level.

There are also a number of basement and one story house designs which rejuvenate that scheme. In place of costly, waste cellar space, these hillside designs excavate partial basements at the rear of the house to gain above-ground quarters for the extra bedroom and bath, storage space, extra living room or study, which would cost more, require more heating, if added to the house as a second story.

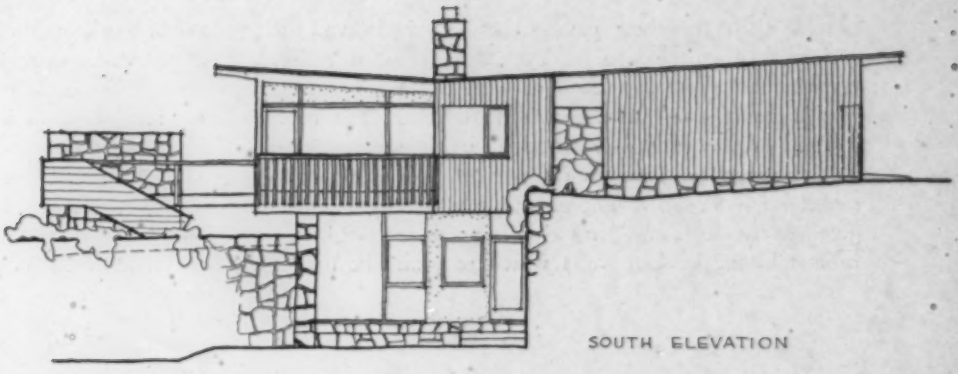
The heating merits of these two schemes are of particular interest in view of R. K. Thulman's heating article, included in this issue, which summarizes new heating practice and methods and speaks out frankly on some recent theory.



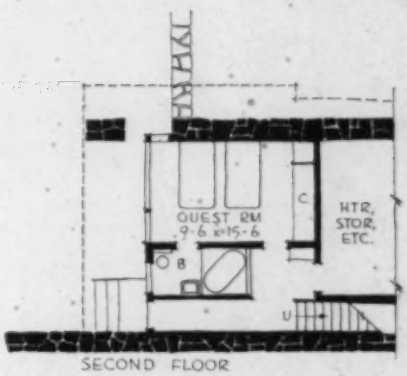
MASSACHUSETTS

Residence for Dr. Harry C. East, Andover, Mass. • Hugh Stubbins, Jr., Architect

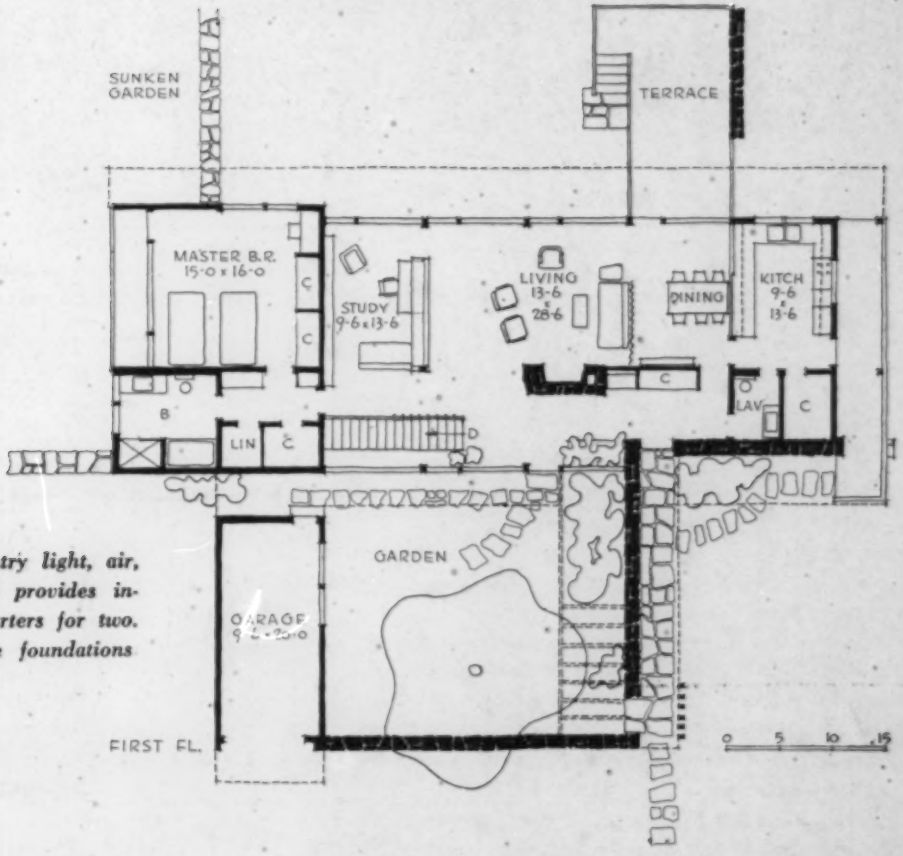
THERE's more to this scheme than meets the casual eye. the master bedroom, kitchen porch, and pergoled path to the front door, give every side of this house a pleasant tie with the gardens fore and aft of it. Add to these features exterior walls which are chiefly of glass, for indoor enjoyment of the countryside, an interior agreeably casual and informal in its arrangements while still providing areas carefully tailored for specific functions, and you have a house happily fitted for country living. The site is no stranger to such because it used to hold an old farmhouse whose foundations have been incorporated in this design to eliminate much grading. A silo foundation will become a lily pool and cows will be mildly surprised to find a sunken garden within the foundation walls of their demolished barn. Inside the house, wall cabinets will divide kitchen from dining space *and* supply service between the two, cabinets serving as useful furniture will set the study apart from the general living area, and a movable curtain partition can give seclusion to the dining spot. Privacy is given the master bedroom by the only major permanent partition on the main floor. The location of the house on old foundations allows a hospitable guest suite below stairs and abundant storage space. Outside walls will be fieldstone and painted cedar siding, interiors of plaster; shed roofs, tar and gravel; floors, stone and wood; heating, radiant heating arranged in the ceiling.



SOUTH ELEVATION



SECOND FLOOR

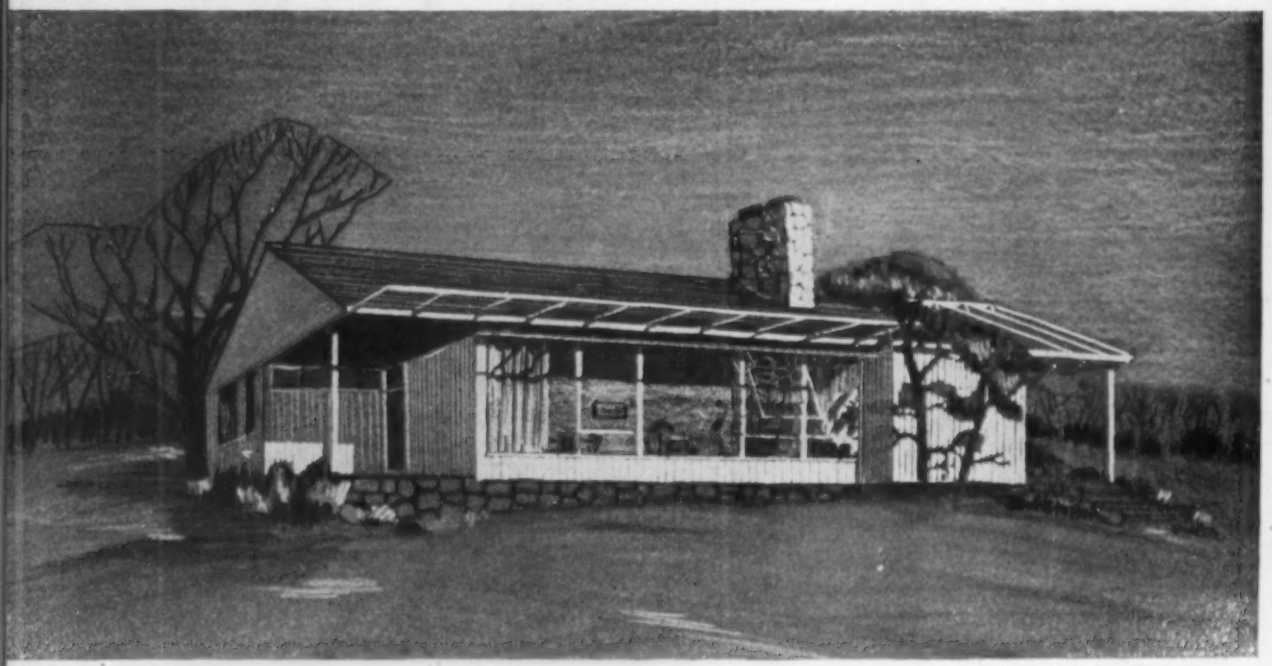


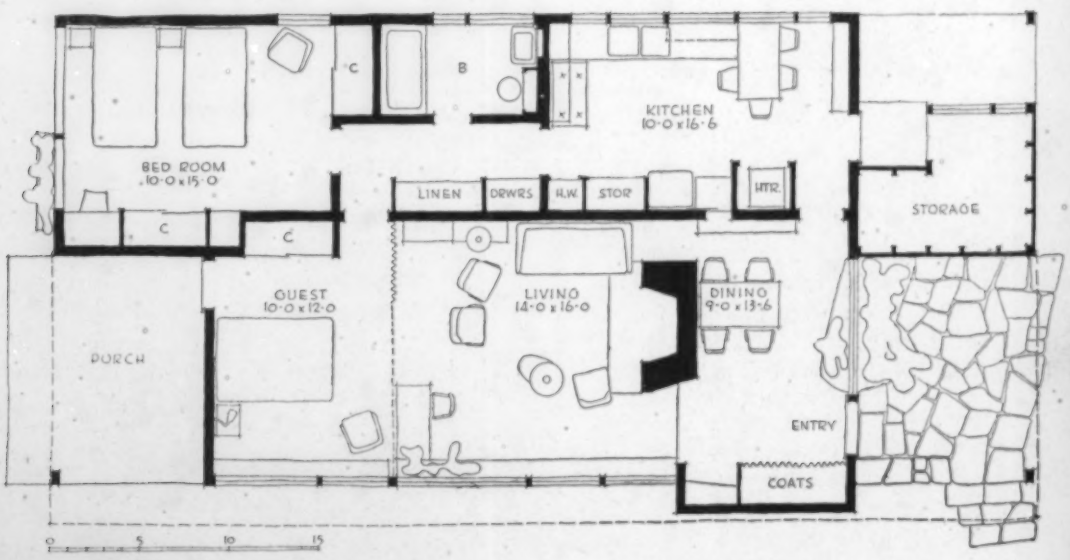
Leaving itself wide open for country light, air, view on three sides, this scheme provides informal, flexible, well equipped quarters for two. It will incorporate old farmhouse foundations

PENNSYLVANIA

Bucks County, Pennsylvania house • Hugh Stubbins, Jr., Architect

OTHER than the short passage between bedroom, bath, and kitchen at the back of the house (and it includes storage), no space is wasted on halls in this open plan. The front of the house, glazed to overlook the rolling Pennsylvania countryside, is one big living room. A movable partition can shut off the end of the room next the main porch for an occasional guest, and table and chair group at the other end form a dining spot (served by open cabinet in the kitchen wall) which may also be used for cards, work or study. A stone floor marks off this dining area, which does additional duty as the front entrance hall—a pleasant combination reminiscent of the old country farmhouse in which the most used entrance led to a sociable kitchen-dining room. The flagged entrance porch has a glass roof to prevent darkening the dining hall, a welcome feature where gaining a desirable porch frequently means spoiling a desirable interior. The house will be vertical cedar or painted redwood outside, plaster inside.

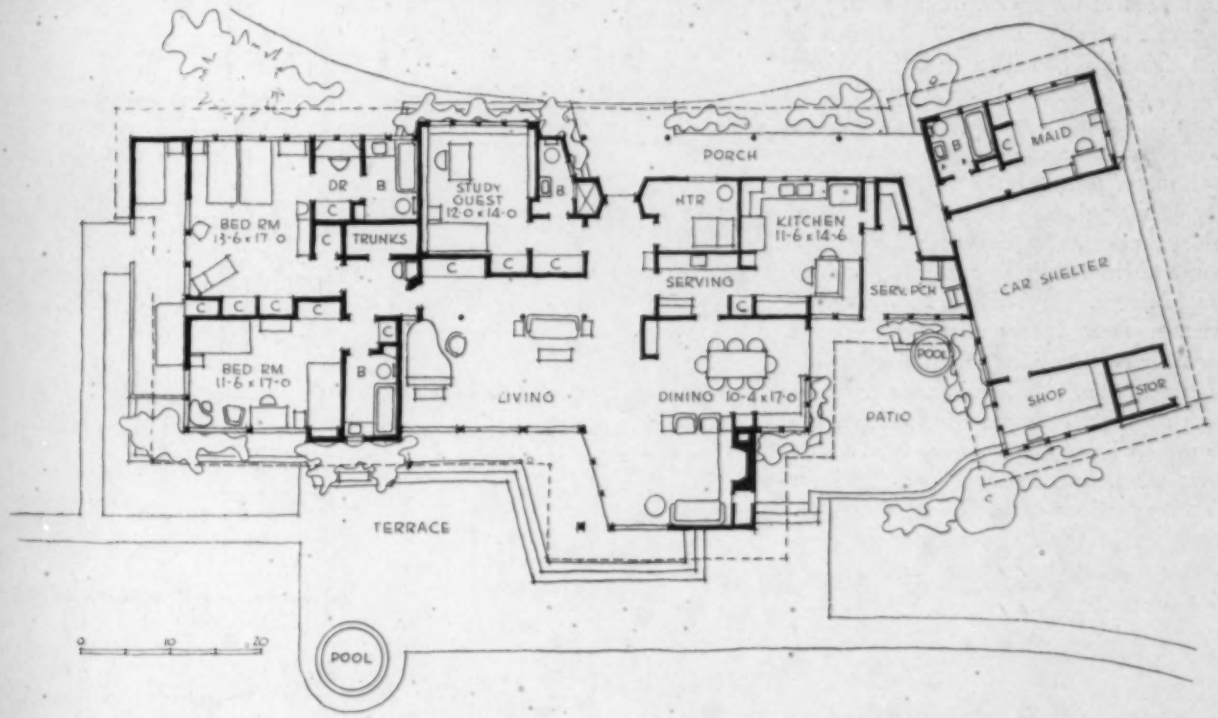


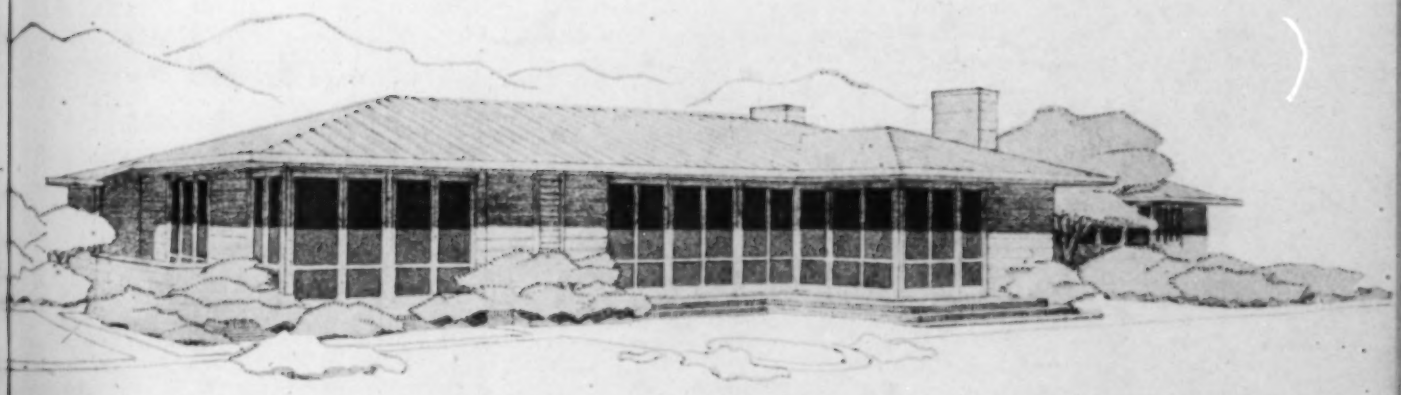


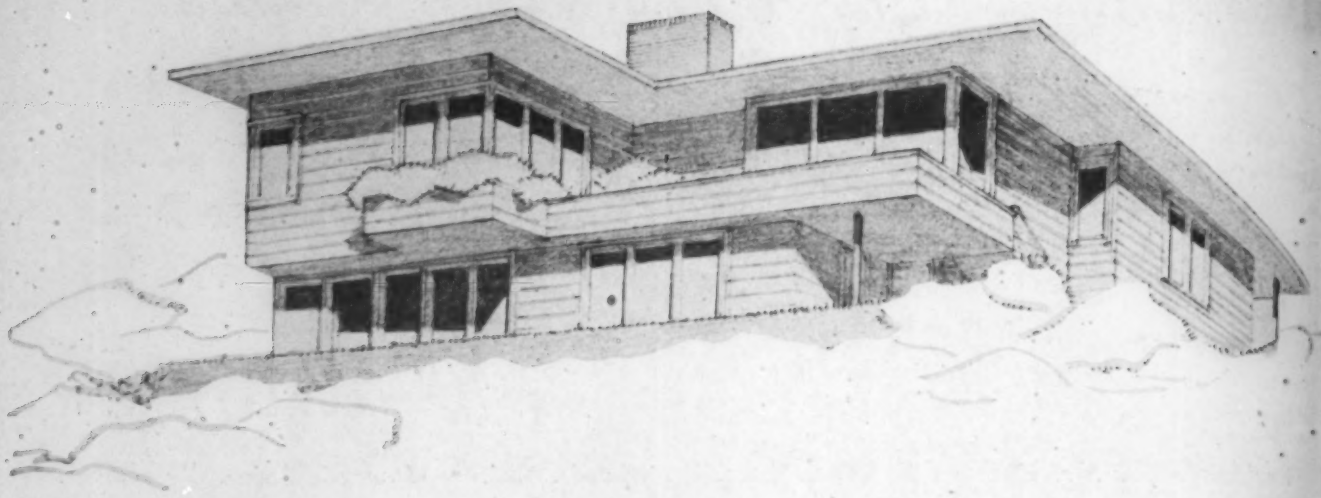
CALIFORNIA

Residence for Mr. Herbert N. Witt, Kent Woodlands, Cal. • Howard Moise, Architect

TAKING its cue from its level lot and two-acre scope, this house spreads itself long and low, keeping woods and mountain in view, while achieving a modestly spaced, well coordinated plan. The living room jogs out to catch southwest views with full windows but is protected from afternoon sun by roof overhangs. Extra assets of the plan are its abundant closet space, privacy of study-guest room, independence of servant quarter, enlargement of living room by adding circulation space without turning room into a hall, insulation of living-dining area from kitchen noises and odors by serving pantry and the well protected southeast patio.





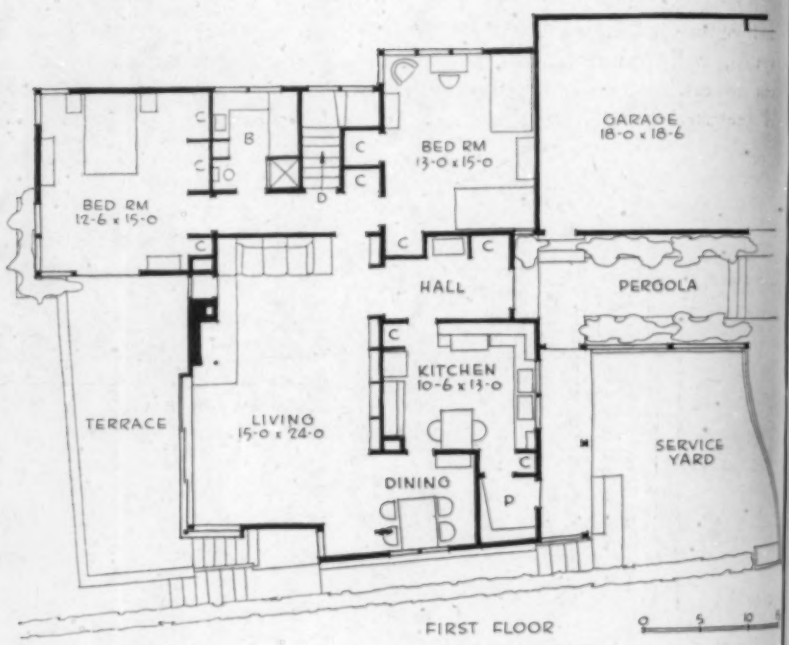


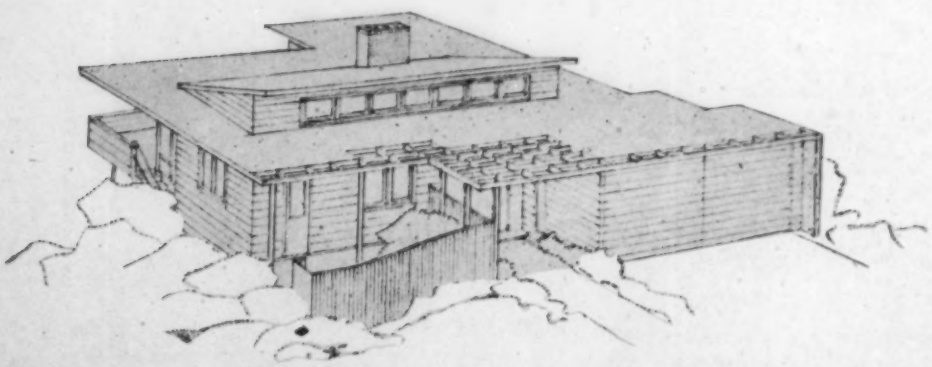
CALIFORNIA

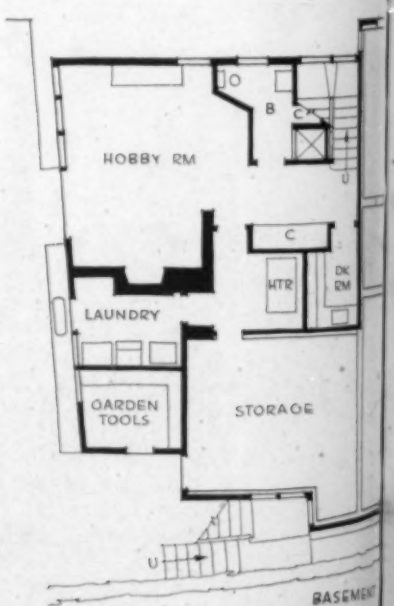
Residence for Mr. and Mrs. E. F. Zimmerman, Berkeley, Cal.

Howard Moise, Architect

THE back of the house, facing west, gets first call here; the downhill site gives it that fabulous San Francisco bay view, enables it to add a lower story. Hobby room and adjoining bath, readily used as a guest suite or work room; dark room, tool room, plentiful storage space, laundry opening directly on ground level, are added, making the difference between a house of limited living space and one for ample living. The house is geared to the western view but windows are placed carefully on that side to minimize blazing afternoon sun, overhangs shade them on both stories, a bedroom wing extends out to protect living room terrace from northwest wind. East front of house includes clerestory windows for living room, enclosed front yard, covered passage from the garage to both front and kitchen doors.



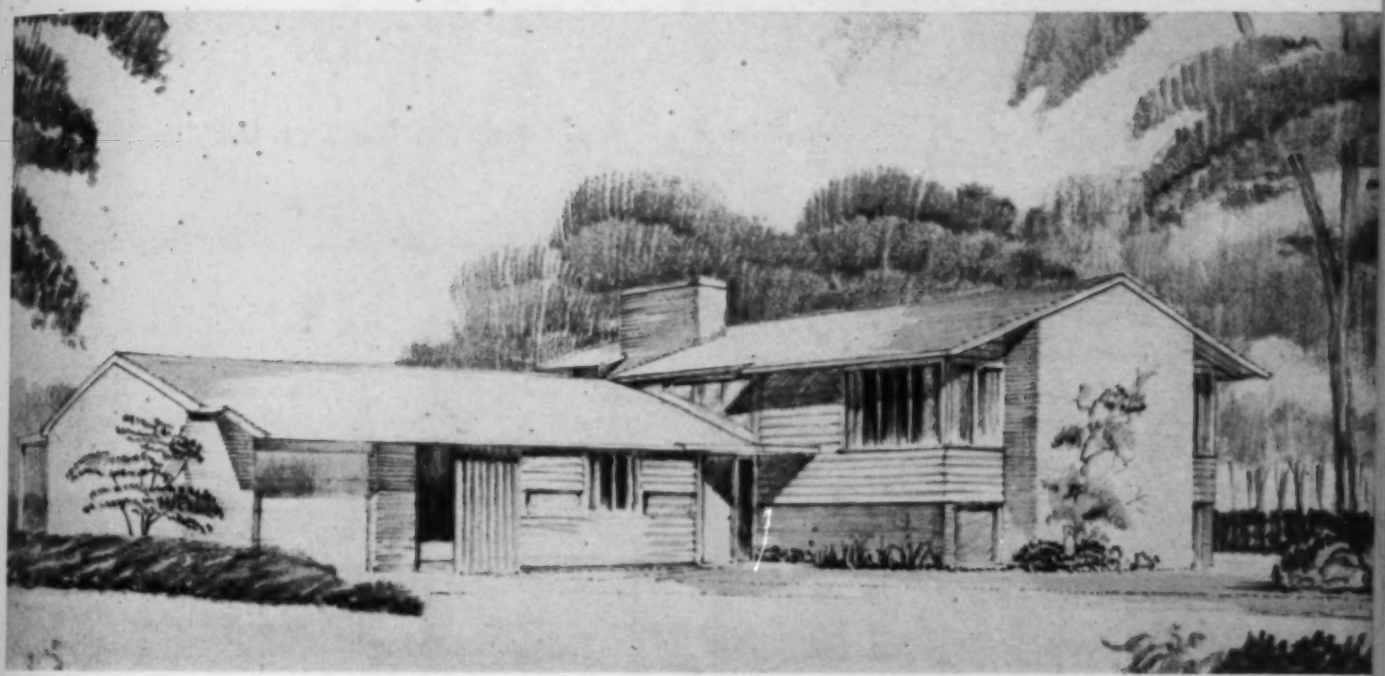


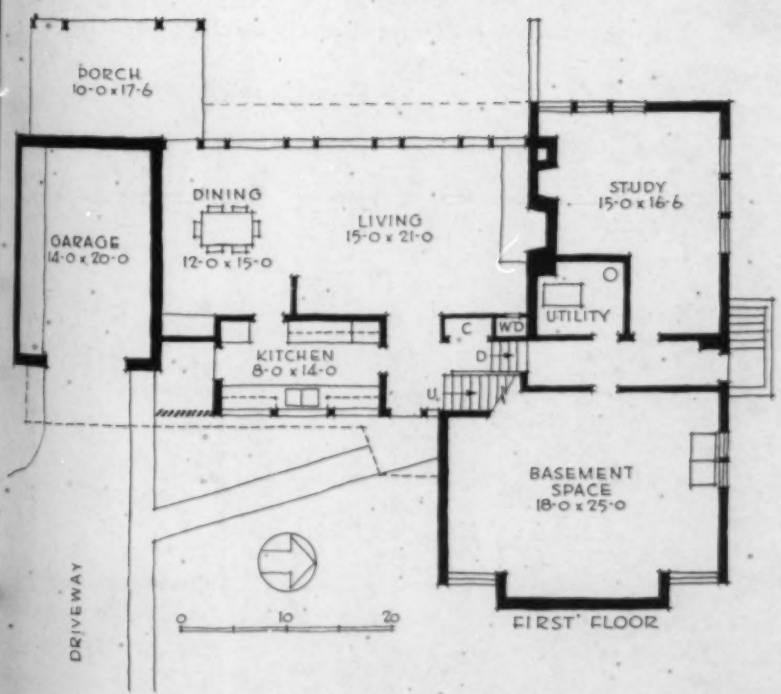


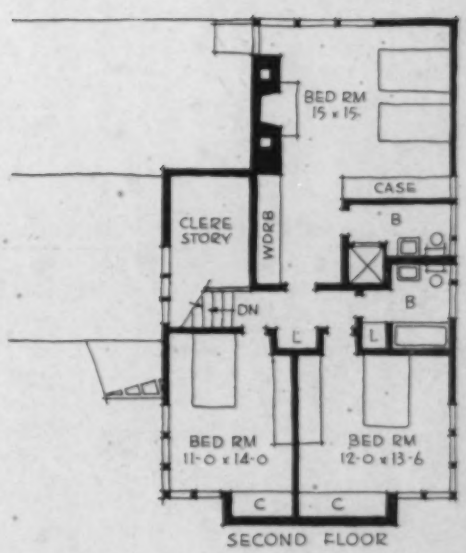
ILLINOIS *Residence for Mr. and Mrs. A. W. and Lt. George Hitchcock, Highland Park, Ill.*

L. Morgan Yost, Architect

ADVANTAGES of the story and a half, three level house, are evident in this plan which the architect calls "an exercise in getting as much livable space as possible in a given volume." He makes the basement pay its way for the cubage it uses by planning it as a truly habitable floor, providing extra rooms which are well ventilated, well lighted by above grade windows. Handy to but separated from the main floor by a few steps, it is a logical spot for a private study and a general activity room supplementing the living room. The compact, L-shaped arrangement of the house—single story, living room-service quarter ell, joined to two story basement and bedroom ell, not only adds up to an economical design calling for less construction than a similar number of rooms stretched out in one story, or in a full two stories, but the rooms are better related where nearness is a virtue, better separated where seclusion is desirable. The difference between short flights of stairs between floors and a full flight is a livability factor of major importance to those who live in a house day in, day out. As an additional blue ribbon, the compact plan is a cost saving factor in the installation of the heating system and in its maintenance.





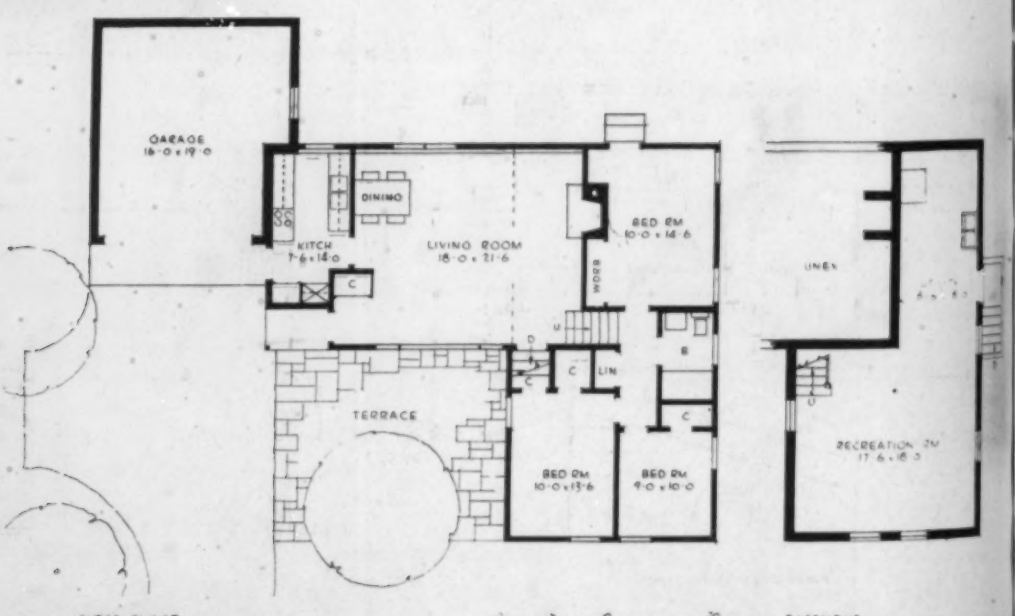


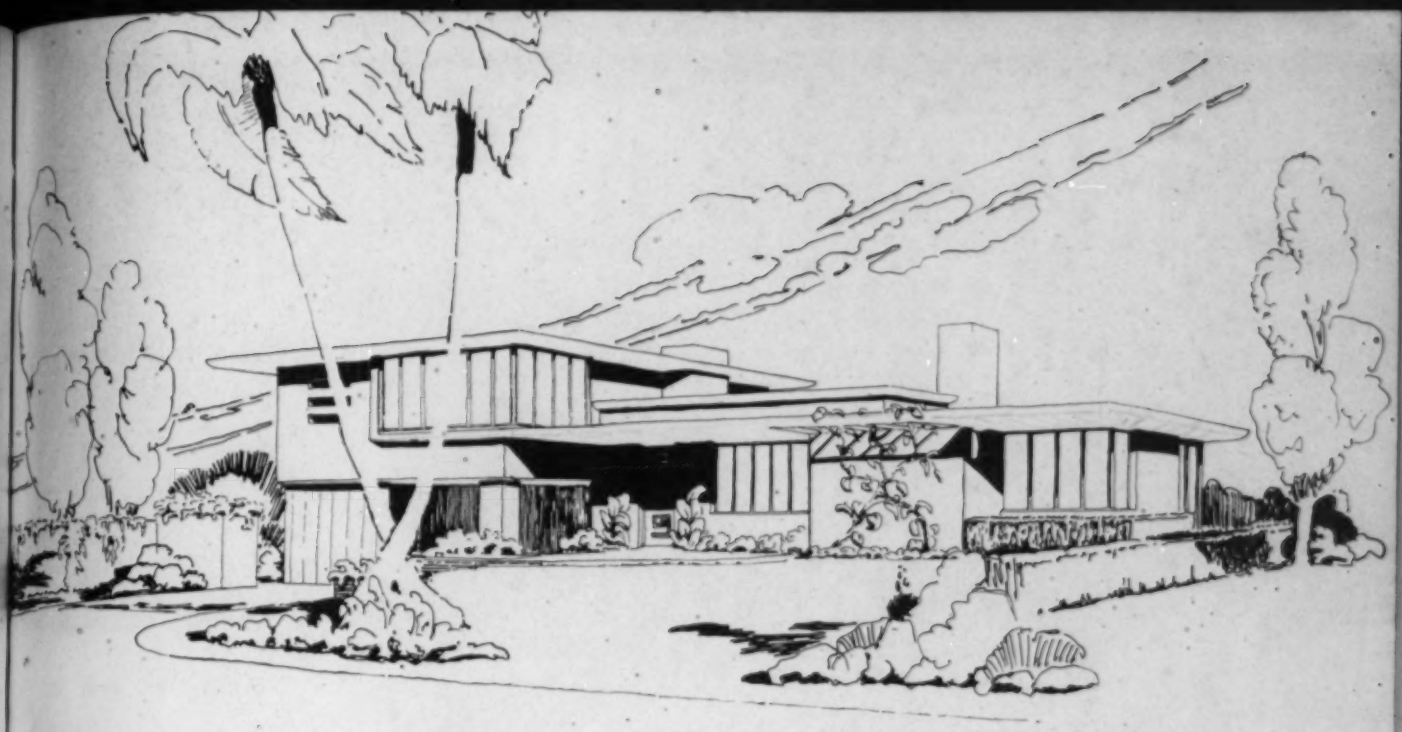
ILLINOIS

Residence of Mr. and Mrs. J. C. Frehner, Highland Park, Ill.

L. Morgan Yost, Architect

LIVING on three levels has worked successfully in this completed, occupied house. The closely knit scheme places the living room on ground level in easy reach of the important, view commanding front terrace. It locates the bedrooms seven steps up from the living room, sufficiently far away to give them seclusion, not half as far away or as tiring as a full flight of stairs. It fits in a recreation room six steps down from the living room; only slightly below ground, lighted by full windows, this doubles the general living space, and isn't a dark cellar catch-all.





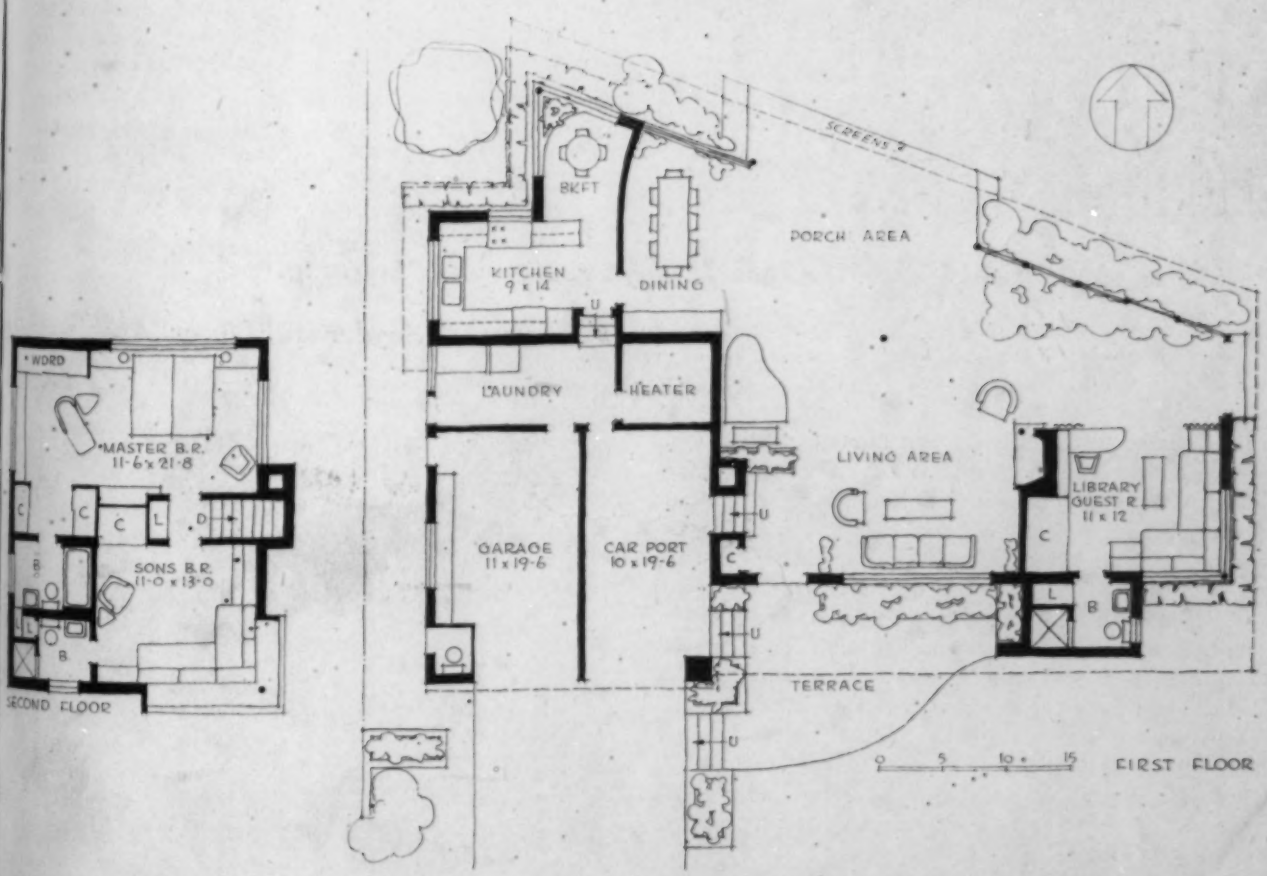
FLORIDA

Residence for Mr. and Mrs. N. M. Kaplan,

Miami Beach

Snyder, Nims, and Lowry, Architects

THE story and a half house turns up in Florida too, where it has special advantages. Tailored to the tropics, it permits the elastic, luxuriously spacious, many purpose, indoor-outdoor living space so suited to activities of this blue sky, blue water setting. Compactly combining the bedroom-service wing on two levels keeps the house modestly fitted to a 75 by 150 ft. lot instead of spread out in costly, step wasting, one story wings. With halls non-existent, all rooms are close at hand, and the general room serves equally well for separate living and dining room, library and porch, or as huge all purpose room.

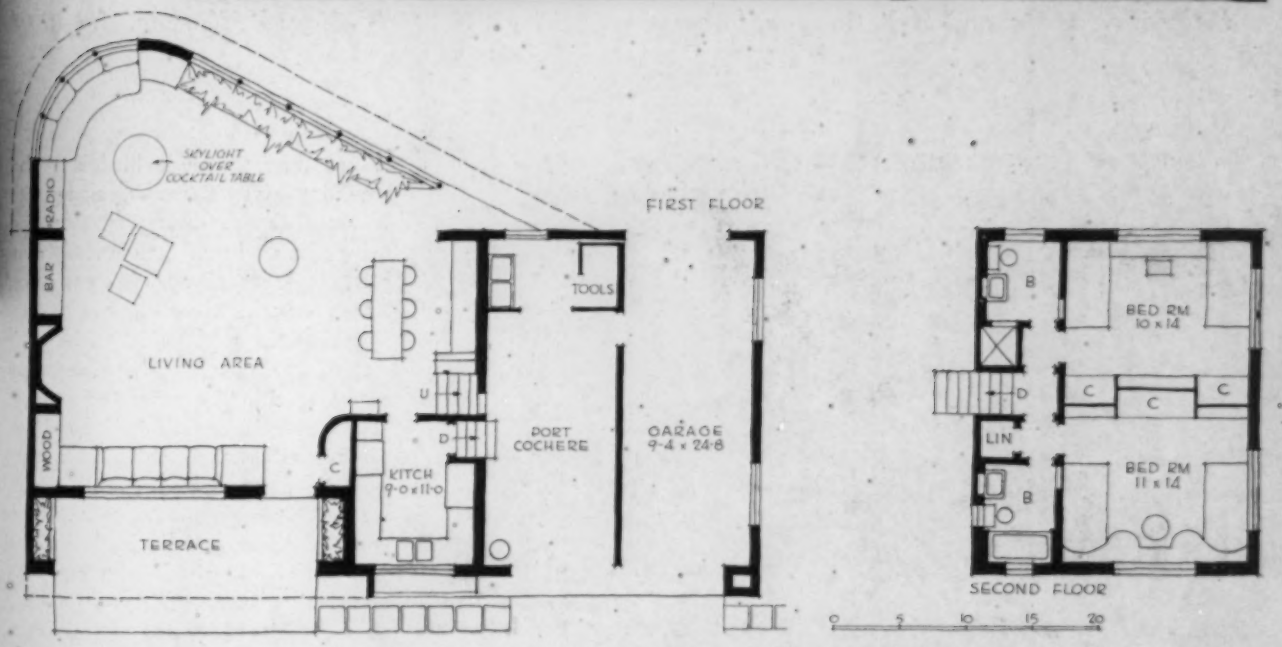


FLORIDA

Residence of Mr. Wahl J. and Miss Jean D. Snyder, Biscayne Pines, Fla.

Snyder and Lowry, Architects

THERE'S more to this scheme than meets the casual eye. Shrewdly plotted on three levels, raising the rooms above the high water and dampness line, the interior does an expert job of giving its owners the particular kind of living space and home making facilities they need and yields an attractive, individual exterior. Since the need was for an oversize, flexible living room, for group entertaining, for dining, for conversation, an irregular room was provided with adjoining kitchen. Wide window areas, fore and aft, catch the water views, expand the apparent room limits, as does the inside-outside window planting. Dropped ceilings over built in sofa areas give conversational intimacy. Eight steps lead to bedrooms separated by closet wall; five steps lead down to carport, laundry, garage-boat house.

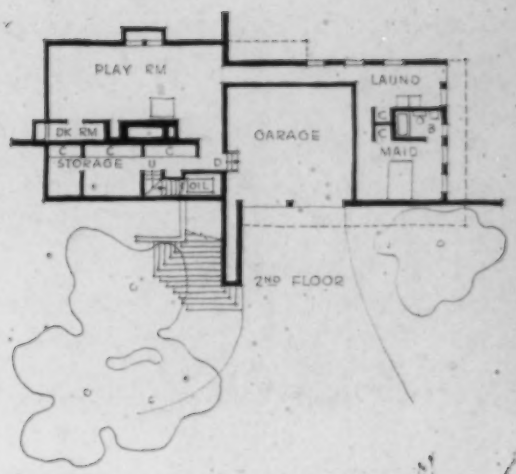


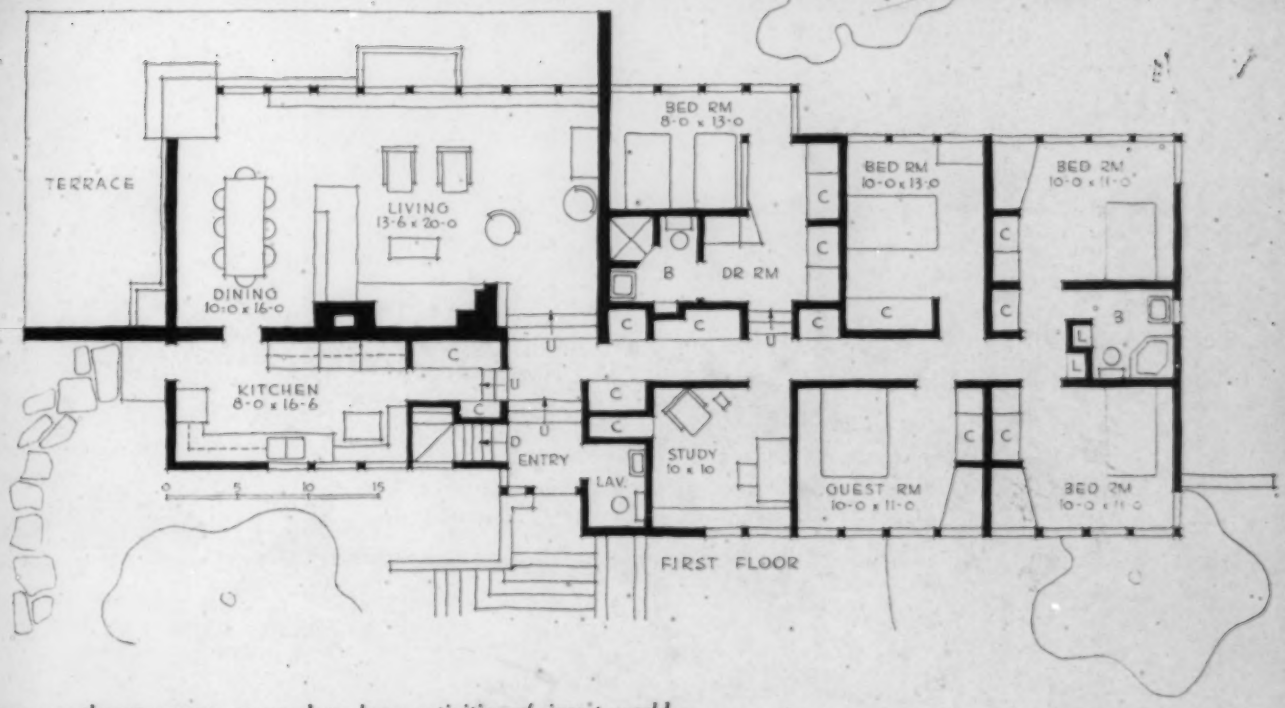
Built above high water and dampness line, this story and a half house affords living, working, sleeping areas in close proximity. View catching window gives large scale to living room, dropped ceilings reduce it for quiet corners

WISCONSIN

Residence of Dr. and Mrs. Cooper, Shorewood Hills, Wis. • William V. Kaeser, Architect

RARER than the dodo bird is a plan providing *five bedrooms,* along with generous living, dining, service, and storage areas, in an economically compact, single story and basement house. That's the trick turned here with shoehorn skill in a 31 by 72 ft. rectangle with no costly, cubage-consuming wings or ells. The plan has a simple, effective division: left half for living, dining and kitchen areas, each amply spaced, comfortably organized, directly keyed to the outdoors and to each other; right half, secluded from general living activities, for individual sleeping rooms fitted with built-in desks, cabinets, ample storage space. Circulation is adroitly controlled by a single hall on which the front door and every room on this floor opens. The dividends of the plan, its above minimum, extra livable features, include a study easily serving as a sixth bedroom, a dressing room with master bath, entrance hall lavatory, two car basement garage, 12 by 30 ft. recreation room, dark room, maid's quarters (with outside entrance through laundry) and *23* closets plus a storage room. Cypress siding and 4 by 8 by 24 in. concrete block were selected by the architect "for getting a lot of space at reasonable cost and for its decorative possibilities." Exposed inside and out of the house, the blocks were laid up in straight joints in double walls tied by reinforcing rods.



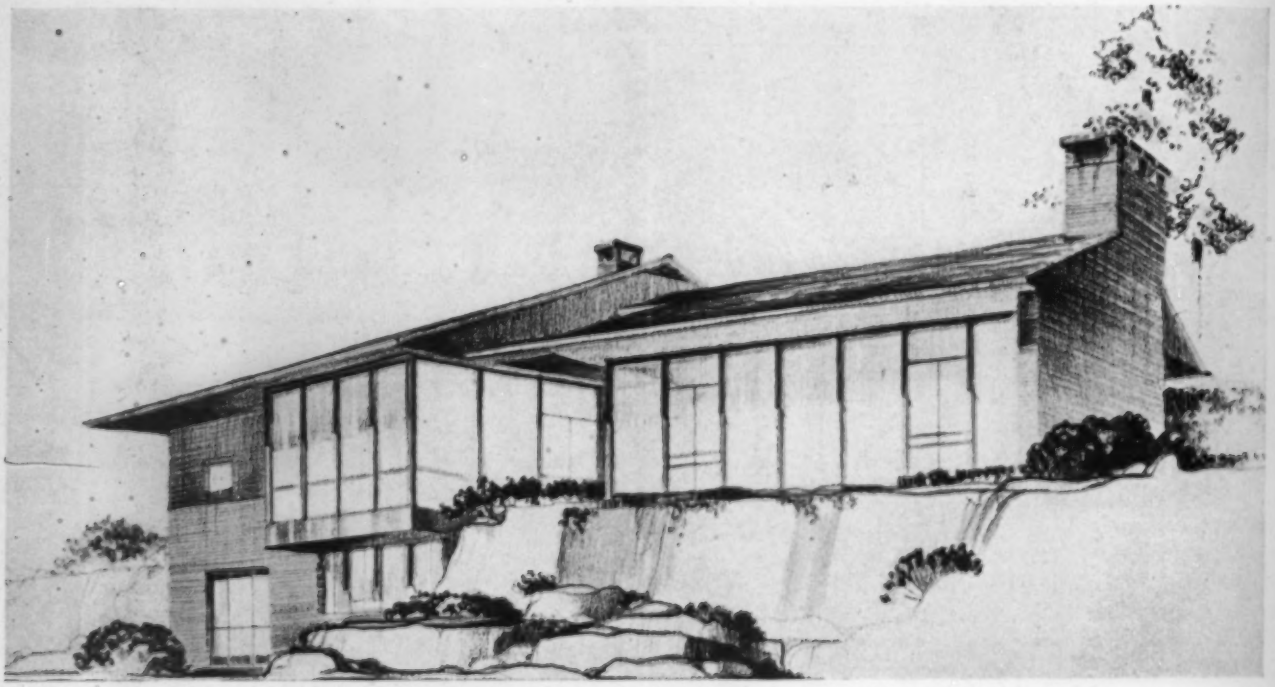


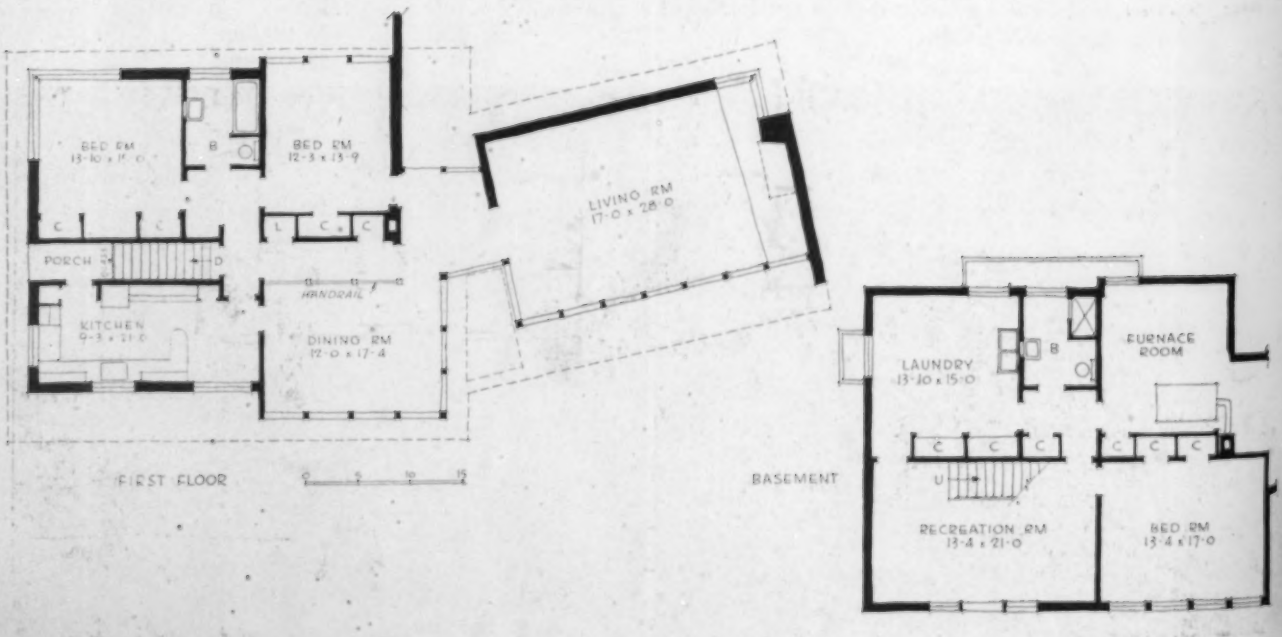
Terrace: southwest corner screened to keep activities of insect world outside, those of household's young fry inside. Plan: five bedrooms, study-bedroom, separate servant quarters, 23 closets, storage room, two car garage, generous living and service quarters in uncomplicated rectangle

WASHINGTON

Residence for Mr. and Mrs. George H. Lewis, Overlake, Wash. • Paul Thiry, Architect

WORKING with these ingredients—hillside sites, magnificent lake and mountain views, local masonry and timber materials, a fresh and frank approach to planning, freedom from a heavy-handed architectural tradition—Pacific Northwest architects are shaping many of the most intelligent, and attractive of tomorrow's houses. Well placed and well planned, Mr. Thiry's scheme fits its sloping, one acre, lakeview site agreeably, fills its owner's wants successfully. Pleasingly domestic in character, it has sloping shingled roofs, frame and brick veneer walls with fixed glass panels, screened, steel sash windows. Conforming to the land contour, the living room wing bends away from the house and a glass wall weaves across its entire west wall as a view-snaring, floor-to-ceiling window; it continues around the connecting entrance hall and juts out as a dining room bay. The hillside site allows a lower floor to the house, amplifying its storage, service, sleeping and living facilities.



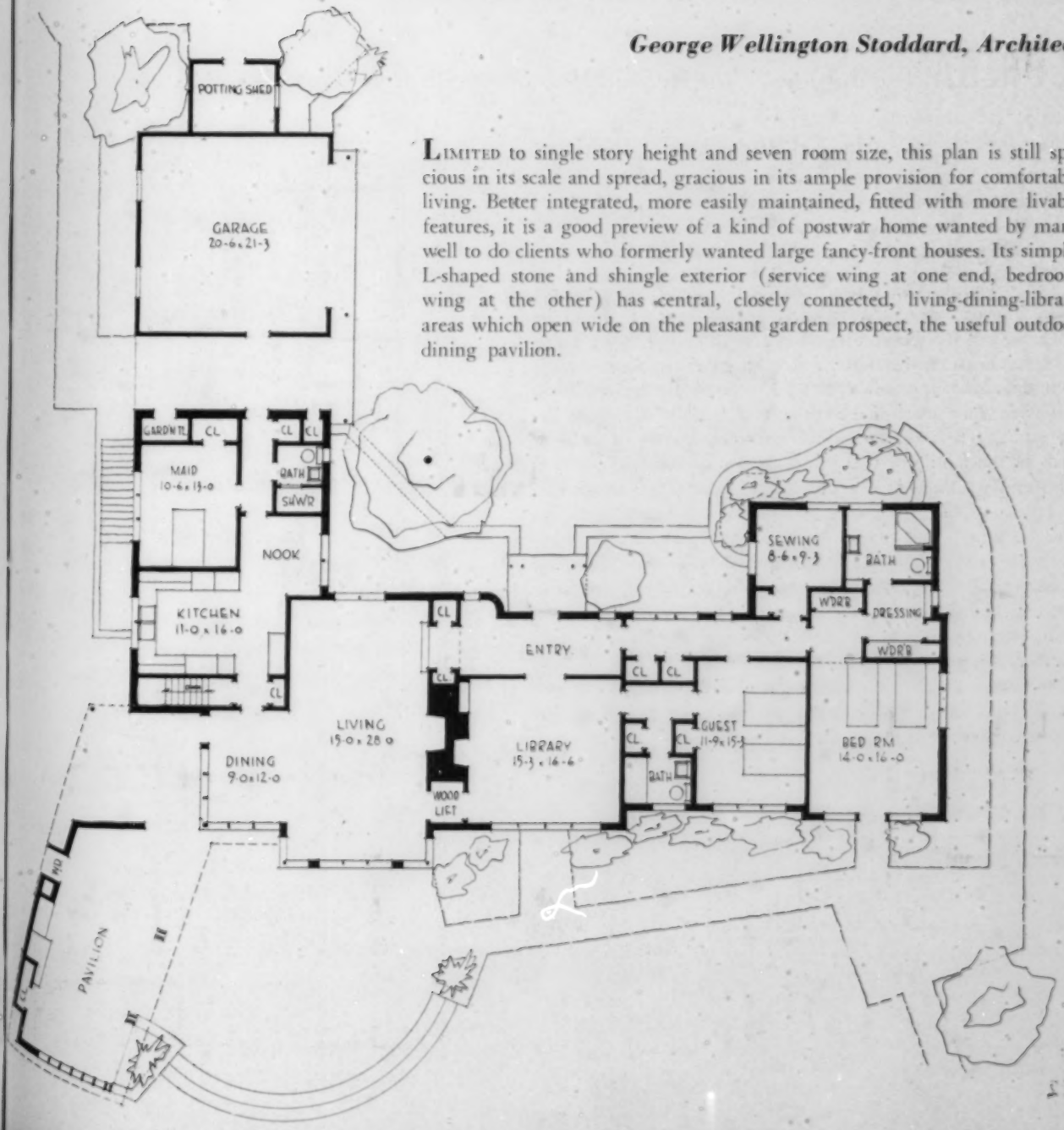


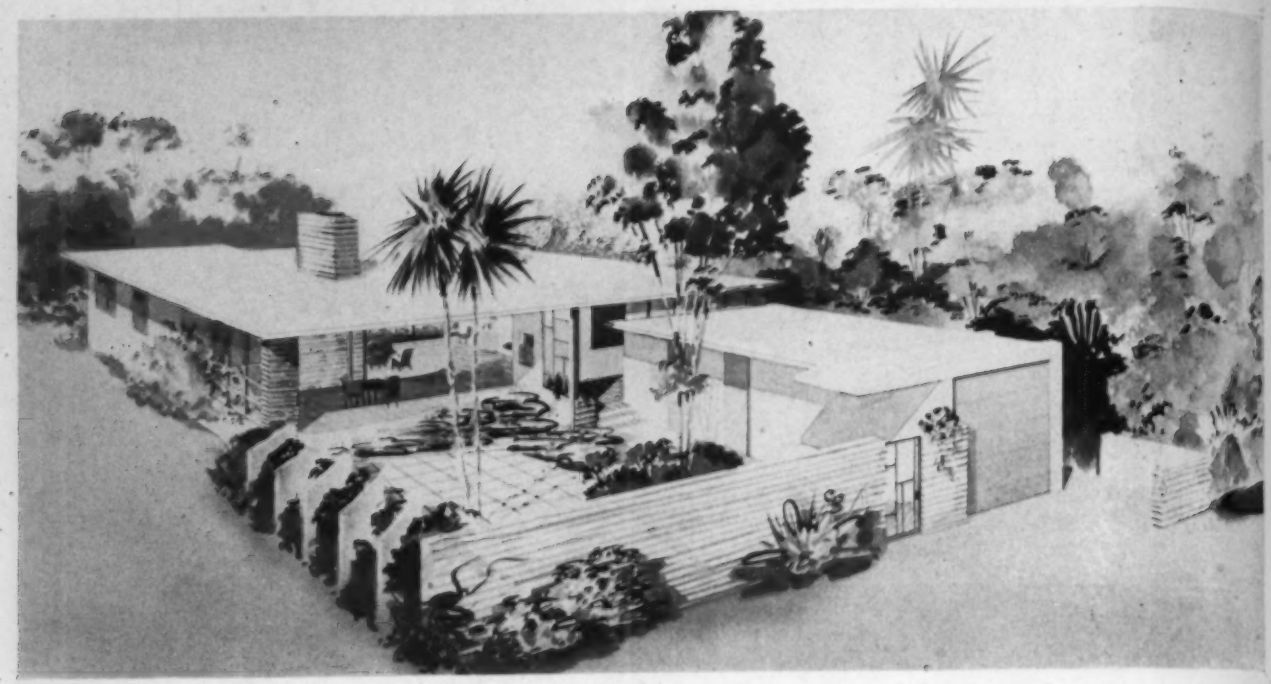
WASHINGTON

Lake Washington House, Wash.

George Wellington Stoddard, Architect

LIMITED to single story height and seven room size, this plan is still spacious in its scale and spread, gracious in its ample provision for comfortable living. Better integrated, more easily maintained, fitted with more livable features, it is a good preview of a kind of postwar home wanted by many well to do clients who formerly wanted large fancy-front houses. Its simple, L-shaped stone and shingle exterior (service wing at one end, bedroom wing at the other) has central, closely connected, living-dining-library areas which open wide on the pleasant garden prospect, the useful outdoor dining pavilion.



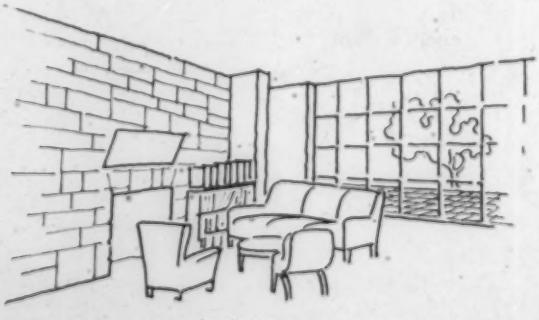


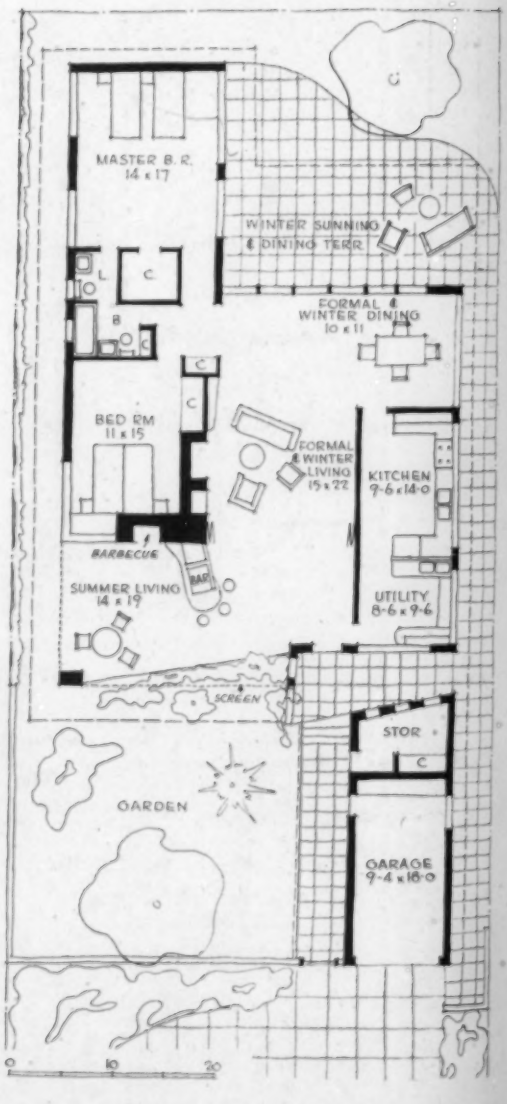
FLORIDA

Residence for Mr. and Mrs. Benjamin Mesrobian, Surfside, Fla.

Igor B. Polevitzky, Architect

MAXIMUM ventilation was a must for this house, designed for South Florida where the architect says, "the area would be untenable but for the southeast trade winds." The 50 by 112½ ft. lot faces east on the street, posing the problem of preserving front door privacy while opening the house to the southeast. The wide open plan devised furnishes flexibly adjustable living quarters to meet formal or informal, indoor or outdoor needs of the family of two in any season or condition of sun, wind and weather. At the same time, garage and front wall, cleverly contrived south wall, protect it from street, while inside the house well placed bedroom and service areas have necessary privacy, though little space is spent on halls, little expenditure on partitions. Interesting is the placing and planning of bath-lavatories, the front terrace screening which, "hung from roof without wood supports, lapped and sewn together, allows planting to wander through screen, is flood lighted inside and out, eliminating it visually at night." House will be built on elevated concrete slab with terrazzo finish, flat roof will be well insulated and ventilated.



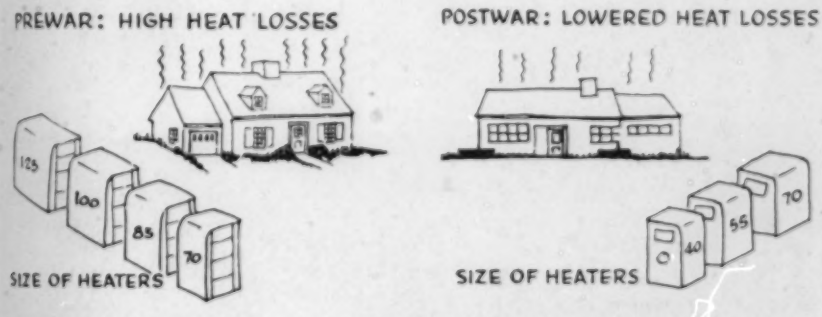


WHAT'S AHEAD IN HOUSE HEATING?

By Robert K. Thulman

The author, an expert in technical matters for the Federal Housing Administration, steps out of his official role for the moment to speak his personal piece on the pros and cons of the many new ideas in residence heating, ranging from those already tried and accepted to some that are still in the clouds

A FEW short months after Pearl Harbor, the greatly increased demand by the armed forces and war industry for petroleum and natural gas resulted in the virtual prohibition of the use of these fuels for the heating of new homes. With the rationing of fuel oil, much oil-burning equipment was removed from existing houses. The oil burner user who elected to continue to use oil was forced to shiver, shut off some rooms, use auxiliary space heaters and stoves, burn wood (somewhat ineffectually) in his fireplace, and insulate.



"insulation has created a demand, especially in new housing, for equipment of smaller capacity than the manufacturers have been accustomed to build"

WPB regulations limited the capacity of heating equipment in order to reduce the quantity of metal required. This practically forced the use of insulation in all new construction. Restrictions in the use of lumber and other building materials effected a general reduction in the physical size of houses. The combined over-all effect was a reduction in the capacity of heating equipment required in new construction, of approximately 30 per cent. Manufacturers voluntarily reduced the number of "lines" of equipment and also the number of units in each line. Overlapping of sizes between lines was largely eliminated. The almost universal use of insulation in new, and the widespread application in existing housing has made the postwar buying public "insulation conscious" to a degree far beyond the hopes and expectations of the most sanguine in the insulation industry. Insulation has created a demand, especially in new housing, for equipment of smaller capacity than the manufacturers of heating equipment have been accustomed to build.

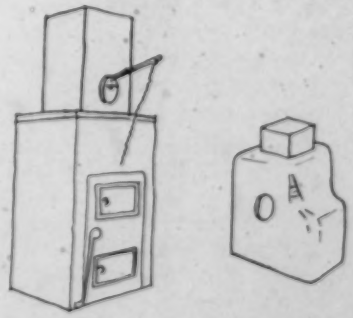
What size heater?

The old line manufacturer of heating equipment is generally not prepared to meet this condition. He is faced with a dual market—replacement equipment for old houses ranging in heat loss from 70,000 to 125,000 Btu, equipment for new houses ranging in heat loss from 30,000 to 70,000 Btu. Even in a good building year about 60 per cent of his product goes to the replacement market through the customary channels of jobber, distributor, dealer and contractor. He will probably try to make his "line" of large equipment fit the new house market. He will probably find it prudent to utilize his established distribution channels to supply the new housing which will be built principally by operative builders accustomed to buy direct in large quantities.

The new manufacturer who has decided to enter the heating field also faces this problem, but we can generally expect that many will look upon the new house market and find it worth-while to concentrate their designs and selling on it exclusively.

Lower heat losses through insulation enable the architect to specify equipment burning the more convenient and cleaner, but usually more expensive, oil and gas fuels without fear of exceeding a cost of heating which his client can afford. The need to use cheaper fuels for the sake of economy is considerably lessened.

For the next few years most of the heating equipment supplied to new housing will be basically similar in appearance, design and performance to that used in the prewar years. New products will take time to develop and try out. It must be remembered that wartime restrictions were not



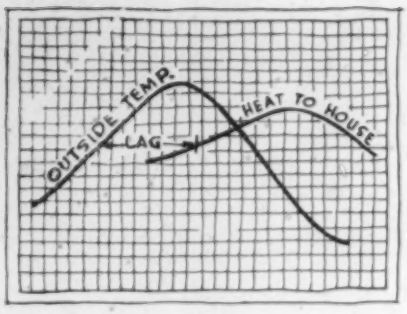
". . . basically similar to those of prewar years . . . new products take time"

conducive to the orderly development of new products in the house heating line with the possible exception of control equipment. Advances in automatic controls make possible both more uniform heat throughout the house and desired variations for certain rooms. There may be some change in heat distribution systems, and herein lies an opportunity for the architect.

Radiant floors and ceilings

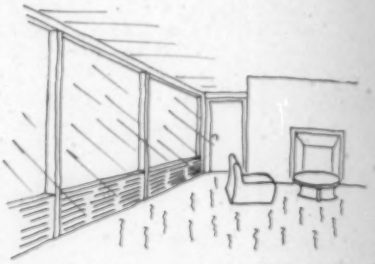
Economies can usually be effected by combinations of function. Economy dictated the now common combination of dining-living room and kitchen-dinette; it is responsible to some extent for the "open" plan. Economy will result from the utilization of floor, wall and ceiling areas as heated surfaces taking the place of radiators and warm air registers. Floor heating is not new. It contributes to a great degree to the greater comfort of the basement house with a boiler or furnace and a distribution system located in the basement. There is usually a substantial heat output from the first floor surface into the rooms due to the vagrant heat losses from the heating plant located in the basement.

The deliberate heating of floor construction accomplishes the same thing and there are a number of successful installations of floor heating systems in residences. They consist usually of a masonry slab in which pipes are imbedded. Hot water is circulated through these pipes and the entire slab is warmed. Several installations of masonry slabs use tile through the hollow spaces of which warm air is circulated. Floor construction is necessarily heavy, massive, and has high heat capacity. Slow to heat, slow to cool, it is not responsive to the fairly rapid changes in temperature necessary for close control. Heat output may lag behind a falling room temperature several hours and will continue a comparable time after a satisfactory room temperature is reached. The treatment of the floor, especially the masonry floor, in terms of the surface finish and carpeting is unpredictable. The owner may elect to leave the floor bare or he may insulate it heavily with rugs with waffled rug cushions underneath. He may finish some rooms one way and others in another manner. The problems of the designing engineer are apparent. The situation is similar to what might occur when an owner decided to install covers on some or all of his radiators in a carefully balanced radiator system.

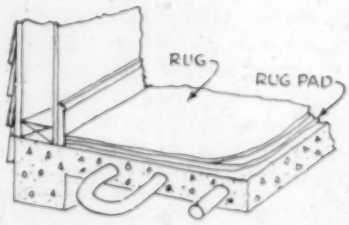


"heat output may lag behind a falling room temperature several hours . . . "

Some floor heating installations have been used in houses characterized by large glass areas. The uncontrolled and spasmodic heat gain in the rooms with the large glass areas plus the typical heat lag of the heavy floor construction disturb the uniformity of heating and complicate the control problem still further.

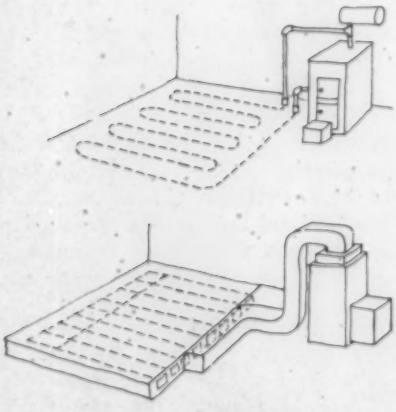


" . . . uncontrolled and spasmodic heat gain in rooms with large glass areas"

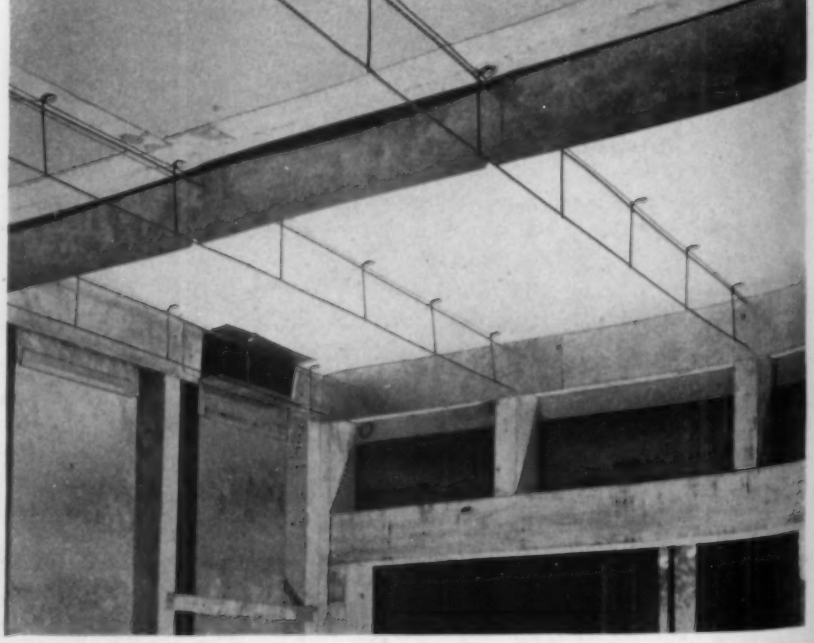


"owner . . . may insulate it heavily with rugs with waffled rug cushions . . . "

A more promising area for use as a heated surface is the ceiling. Generally light in weight, its heat capacity is low and its response to change in the temperature of the heating medium used is greater. Its temperature can be varied over a wider



" . . . slab in which pipes are imbedded . . . tile in which warm air is circulated"

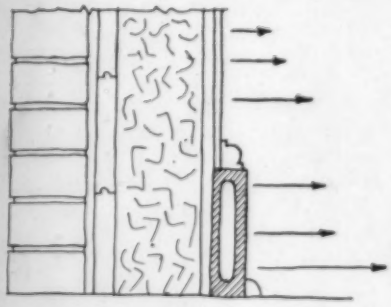


". . . promising area for use as a heated surface is the ceiling . . . many successful installations have been made . . . usually heating medium is warm air . . . "

range without discomfort and the temperature control problem is greatly simplified. Its treatment after construction is predictable within a narrow range; usually nothing more than a repapering job or a new coat of light-colored paint is all it ever gets. Many successful installations of ceiling radiant systems have been made. Usually the heating medium is warm air and in some jobs the air is circulated by gravity, a logical scheme even in a basementless house.

Radiation runs 'round the room

A recent development is the baseboard radiator. Hollow cast iron or copper baseboards approximately 6 in. high are installed in place of the wood baseboards along the outer walls of the rooms and hot water is circulated by gravity or by pumps. Experiments have resulted in floor-

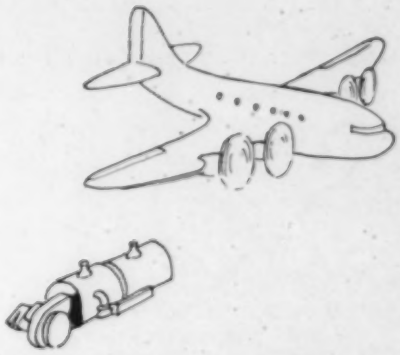


". . . baseboard radiators . . . floor-to-ceiling temperature gradients of 2°"

to-ceiling temperature gradients of only about 2° F compared with the 5½° F gradients obtained with ordinary radiators. Floor temperatures were found to be higher. Used in a basementless house, they may well provide a satisfactory answer to the cold floor problem. The manner in which they are installed and the wall construction are important. They should be applied close to the studs so as not to extend too far into the room and in order that the plaster base and plaster can be in contact with them to conduct heat into the plaster itself. This provides a greater radiating area using the lower portion of the wall as a heated surface. The wall itself must, of course, be heavily insulated.

Those airplane heaters!

Several manufacturers of airplane, truck and tank heaters used in large quantities during the war, are planning modifications of these devices for use in homes. The general plan is to build small size units ranging in output from 10,000 to 25,000 Btu and to install two or more units. The expected advantage of individual room or separate area heating may be somewhat lost due to the open plan of the new house and the probably generous use of insulation. Both these factors tend to minimize the problem of uniform heat distribution since excess heat from an overheated room



"manufacturers of airplane and tank heaters . . . planning for use in homes"

is easily circulated to underheated rooms through wide archways, and insulation tends to lessen horizontal gradients.

There are instances, however, when spot heating is desirable. In many parts of the country the bathroom is the only room heated during the early fall and late spring. The 1½-story house in which the finishing of the second floor may be postponed for several years offers another profitable application of multiple unit heating. There is also ample opportunity for use of this kind of device in old houses in which the heating of one or more rooms has been a long standing problem. In the new house the multiple unit method of heating requires a multiple fuel supply and venting system. The devices themselves require redesigning for home use to overcome noise problems not serious in automotive equipment or aircraft.

The metal chimney develops

During the war considerable progress was made in the development of new light-weight metal chimneys which have promising application in postwar housing. Originally designed to provide a salvagable chimney for demountable houses and to avoid the use of masonry, they were found to out-perform the ordinary masonry chimney by producing adequate draft quickly and by reducing standby losses.

The products of combustion of house heating devices must be conducted safely outside the dwelling. Most such devices are supplied with combustion air in whole or in part by the negative pressure or draft of a chimney. The draft is caused by the unbalance created when the column of gases in the chimney is heated, causing it to rise and be displaced by cold air drawn into the heater. If this process can be accomplished with little heat, and quickly, the heating system is more responsive and economical than if a high outlet temperature and a long time are required to reach equilibrium. The common "Standard Ordinance" chimney is slow to heat, requires high outlet temperatures from the heating device to create the necessary draft, is slow to cool, continues to maintain high draft long after the fire is banked or shut off. Its construction conducts heat readily, its temperature gradient from bottom to top is high and if it is located on an exterior wall, its conducted heat is lost to the outdoors.

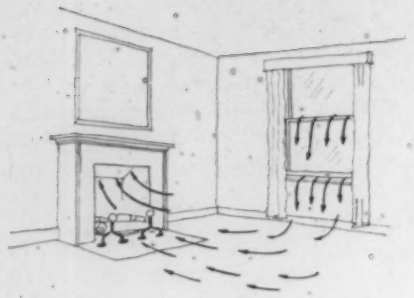
The light-weight metal chimney is the opposite of all this and its effect on improvement in the performance of all types of heating equipment is considerable. It can be designed to include means for providing air for combustion and more effective attic ventilation. It can be utilized to improve the performance of all types of heating devices including the fireplace. It requires less space and permits the architect to locate his heating equipment independent of the fireplace chimney.

Fireplace faults

The war experience with auxiliary heating equipment proved fairly conclusively that the ordinary fireplace is a luxury. The large amount of excess air used for combustion in fireplaces increases the infiltration to a point where the cost of heating the air often exceeded the value of the heat output of the fireplace. We were advised to keep the fireplace damper closed when the fireplace was not being used, but this practice was a bit impractical because the usual habit was to go to bed before the last of the fire had died out and the damper necessarily stayed open until morning.

The chimney furnace

An interesting wartime development in heating is the chimney furnace. It consists essentially of an enclosure of brick extending from foundation through the roof with a combustion chamber in the base and a metal flue extending from the top



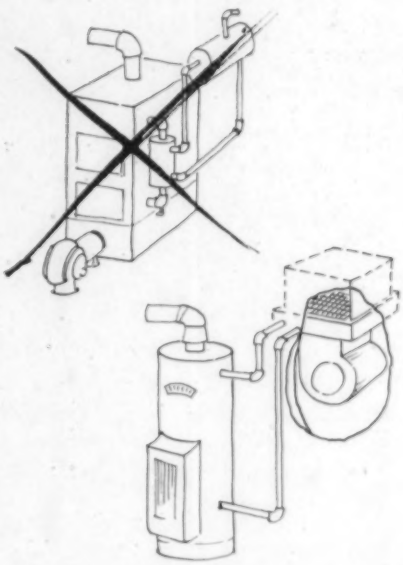
"ordinary fireplace is a luxury . . . cost exceeded value of heat output . . . "

of the combustion chamber through the roof. In the attic section a closure plate sealed the space between the flue and the brick work and a fan was installed to blow air into the sealed off space. Openings in the base of the masonry enclosure were connected to a forced-air distribution system leading to the various rooms, and air, blown downward around the metal flue and brick combustion chamber, was heated and discharged into the room. Returns carried the air upward to the ceiling construction above the ceiling and back to the inlet of the blower.

Originally designed to burn oil or gas, its brick combustion chamber, used for conservation purposes in place of metal, did not stand up under the more severe conditions of coal firing brought about by the oil and gas limitation orders. Postwar designs contemplate the use of oil and gas only as originally intended (the strong draft due to the straight smooth flue is not easily controlled when coal is used), the substitution of metal for the brick combustion chamber and even the use of metal in place of the brick enclosures or chimney proper. Tests indicate high efficiencies due to almost total use of heating surface. The draft is excellent and quickly produced. Standby losses on pilot operation are minimized by the development of low consumption oil pilots for the pot type burner used. The output is about 50,000 Btu with approximately 0.4 gal. per hour oil consumption. Space requirements are less than 400 sq. in. and the total cost should be low. Its installation is confined for all practical purposes to new construction. The device demonstrates another combination—chimney and furnace.

Domesticating hot water

For many years the heating of domestic hot water has been satisfactorily accomplished with indirect heaters attached to house heating boilers. Reduced heat losses of new houses suggest the reverse of this procedure—attachment of the house heating system to the hot water heater. The idea is logical from another standpoint, that is the demand for more and hotter water created by the requirements of the sequence type washing machine and automatic dishwashers. The sequence laundry machine requires water temperatures of approximately 160° F and the full cycle requires quantities of water beyond the capacity of the usual 20 or 30-gal. gas storage water



" . . . reverse procedure—attachment of house heating system to water heater"

heater. A 40-gal. storage capacity with normal recovery capacity is about the minimum. The higher temperatures required make it necessary to use a non-ferrous heater. Ordinary galvanized tanks won't stand up under continued temperatures higher than 140° F. Glass-lined, porcelain enameled copper and alloy tanks or instantaneous heaters consisting of directly or indirectly heated non-ferrous tubing provide the necessary answer to the high temperature and high quantity requirements of the newer laundry and dish washing equipment. The greater capacity required for water service provides an adequate capacity for house heat. Air, heated by a heat exchanger attached to the water heater, can be circulated by the conventional gravity or fan method or through panels, or water heated directly or indirectly from the water heater can be circulated through radiators, baseboard radiators or floor coils to heat the house. The combination effects obvious economies in equipment and service costs and, by combining standby losses, in operating cost.

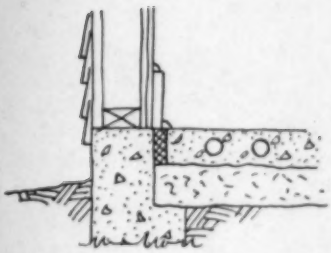
Mechanical cores

There will be offered by a number of manufacturers combination units consisting of prefabricated plumbing, piping and heater and hot water units forming the mechanical central core for bathroom, kitchen and heater. Back-to-back kitchen and bath, inherent in the design of these units, was a wartime must and architects as a rule didn't like it because of the planning restrictions it imposed. Obviously more economical, the back-to-back idea has long been a characteristic of low-cost houses. The expansion of the pipe space in the common wall to include heater and water heater is a natural development but its application is, for practical purposes, limited to one-story basementless houses. It does not seem sensible to install the heater on the first floor level of a house with a basement. Lack of heat in the basement from a basement heating system loses the desirable floor heating effect already mentioned and the advantage of gravity circulation is also lost. Fan circulation for direct air heating with a first floor furnace installation is a necessity. The central core unit in two-story houses is of doubtful value although it may be logical in the 1½-story dwelling where a second conventional bath may be installed initially or later on the second floor.

Gravity or forced?

Basements and gravity circulation suggest the war restrictions placed on forced circulation warm air heating. Limitation orders permitted forced fan heating systems only in houses without basements. Shortages of fans and motors and restricted use of automatic firing equipment caused a widely increased use of the old gravity coal-fired warm air system. Well-installed, this old standby provides a uniformity and continuousness of

" . . . old standby provides a uniformity and continuousness of heat output . . . "

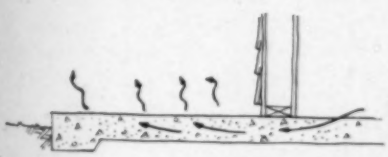


"slab construction . . . poured on ground, lends itself readily to floor heating"

heat output free from noise and with no electrical operating expense, highly desirable for any class of home. Service expense is practically zero and the only objection is inconvenience and a somewhat greater space requirement with some sacrifice here and there of basement headroom. New developments in gravity warm air heating provide for modulated fire with gas and oil providing an approach to and even the equal of the continuous output of the hand-fired coal installation without the inconvenience of ash handling and coal firing.

Development of economical continuous fan operation and better fans for forced air systems, and the development of more effective control devices will largely overcome the objection of the intermittent operation of the common forced air system, but gravity circulation should be seriously considered by the architect as an effective and economical means of heating.

The heating of the basementless house requires forced circulation of the heating medium, be it air or water, except when the ceiling radiant panel system is used. Cold floors have always been one of the major objections to basementless construc-

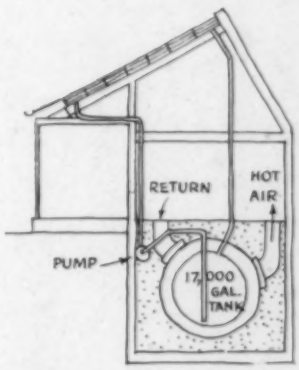


"slab should never extend continuously outside the heated section of house"

tion. If the floor construction is of wood the underfloor space must be ventilated. If closable vent openings are provided, there is no assurance that they will be opened by the owner in the spring. Damage from dry rot can take place quickly and can be extensive. Slab construction, when the slab is poured on the ground, lends itself readily to floor heating and, even without direct heating of the floor itself, provides a much warmer condition than the ventilated under floor space. The edge of the slab in either case should be insulated to prevent the edge loss, and the slab should never extend continously outside the heated section of the house to form a porch or terrace.

Heat from Old Sol

A significant exception to the statement that the war did not contribute much to improvement in house heating is the development of the use of solar energy. Experimental work at M.I.T. with solar absorbers for water distillation should accelerate the development of solar water heaters and, with small auxiliary fuel fired heaters, make it applicable over a much wider area than is now common. It is only a step from solar water heating to house heating. The experimental solar heated house in Cambridge has been in operation for several years. Admittedly not economical, it has



"it is only a step from solar water heating to solar house heating . . ."

nevertheless provided a wealth of data which promises to stimulate further developments of a practical nature.

Some houses have been built with large glass areas having a southern aspect arranged to trap solar energy during the winter. Interest of architects in this idea and in the use of larger glass areas appears to be considerable. The economies are questionable. The amenities of "outdoor living" are probably real, although the reduced privacy may be of doubtful value when one considers that

"interest of architects . . . in the use of larger glass areas is considerable"

privacy is one of the objectives of building a house. "Outdoor living" may be all right in a house with a secluded back yard located in the right direction, but doesn't seem to be too practical for mass-produced houses facing every which way in a subdivision.

One of the heating problems, spasmodic heat input, has already been mentioned. The larger glass areas and the fairly expensive double glazing usually used, tend to nullify the economies of insulation. The heating problems are not unlike those involved in designing a heating system for a greenhouse. The calculation must, to assure adequacy under night conditions, be based on the assumption that no heat is gained through the glass areas.

Cooling systems

There are several interesting possibilities in the field of cooling for houses. The most common will be the smaller versions of the common mechanical refrigeration equipment consisting of compressor, evaporator and condenser with power supplied by an electric motor. The equipment may consist of a central unit connected to the same distribution system that supplies heated air in winter or of one or more room coolers located where the cooling effect is considered to be most necessary.

The absorption system, using heat as the energy source and air, or water if available in sufficient quantity and at low enough temperature, for condensing, will probably be used extensively. High initial and operating costs preclude a wide use of the mechanical system for most houses. The initial cost can be reduced by the use of the storage system in which fairly continuous operation of the system is utilized to store refrigeration in the form of ice, chilled water, or brine for use during peak loads beyond the rated capacity of the refrigeration equipment itself.

Reverse cycle heating

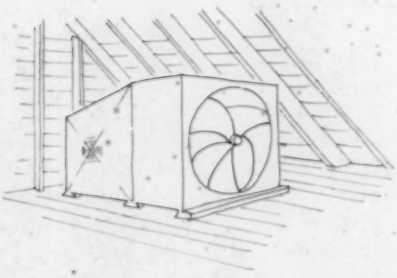
The reverse cycle system has been seriously proposed as a practical house cooling and heating method. The scheme contemplates house *heating* by absorbing energy from a source of heat such as outside air or well water, pumping it to a higher temperature level with a compressor and delivering it to a condenser. The heat from the condenser is used for heating the house. The source of heat energy must be available at reasonably high temperature and its temperature should not vary too much. Well water

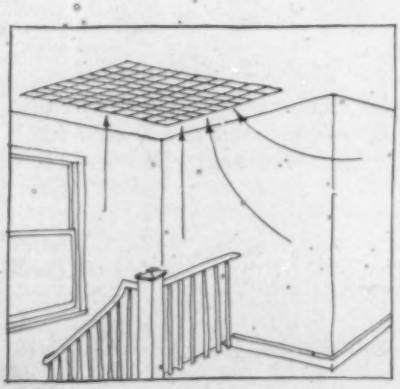
obviously meets these conditions better than outside air but, of course, is not so readily available. Electrical energy, the usual source of power, must necessarily be cheap to make the system economically practical. The use of air as the source of heat is limited to those areas of the country where the winter air temperatures are not apt to be extremely low. Geographically, the practical use with air is, therefore, limited to southern states and possibly the coastal areas of Oregon and Washington. In other areas its practical use depends upon an ample source of well water. The cooling cycle involves the same process as that for the mechanical system using a compressor.

The evaporative coolers utilize the heat of vaporization of water to cool the air. Their success depends upon an outdoor summer wet bulb temperature low enough to permit reasonably high evaporation rates. Generally the system is not practical in localities where the wet bulb temperature rises above 75° F. Geographically the practical use is limited to Arizona, Nevada, Utah and the eastern part of California, although some success may be expected in western Texas, New Mexico, and Colorado.

Fan coolers

The "poor man's air conditioner" applicable for installation in any house regardless of geographical location or climatic conditions is the attic fan. The device is simple, involving only a large-capacity fan and motor, a discharge and intake grill, and a convenient switch. Air is drawn into the house after sundown through the windows, drawn into the intake grill usually located in the uppermost ceiling at some central point and discharged by the fan through an outlet grill located in the eaves.





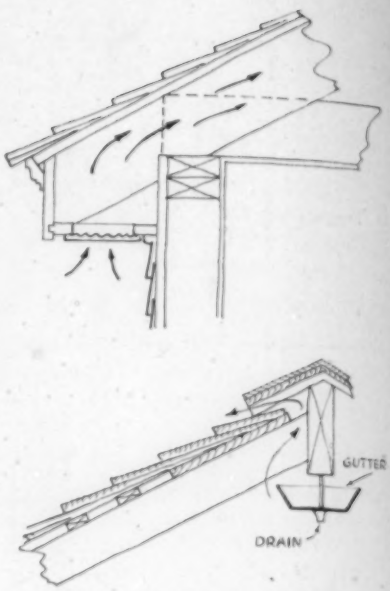
"'poor man's air conditioner' applicable for installation in any house . . ."

Some installations are arranged so that during the day the air in the attic only can be circulated so that the temperature on the upper ceiling can be held down close to the outside air temperature. Originating in the southern states, the attic fan has become popular practically all over the country. Consideration should be given in the installation of this device to the possible fire hazard due to the creation of a high draft in the house, and the fan should have adequate capacity. In the warmer states such as Texas the capacity should be sufficient to provide one air change of the ventilated section of the house each minute; in other words a house of 8,000 cu. ft. volume should be equipped with a fan with a capacity of 8,000 cu. ft. per minute. In cooler areas a slightly lower capacity will produce a satisfactory cooling effect.

Natural ventilation for attics

More attention should be given by the architect to the natural ventilation of attics. If the attic is considered as a heat absorber, the ventilating scheme should be based on the same principles that cause a chimney to operate. There should be ample inlet openings as close to the eaves as possible and ample outlet openings at or close to the ridge. Overhanging eaves provide an excellent location for inlet vent openings. The upper part of the window casing also can be connected to the attic space to provide a series of inlet vent openings where the plate is located directly on top of the window openings. Ridge vents common in industrial buildings can be modified in design to provide an inconspicuous and effective outlet opening or the combination chimney-attic ventilator can be used. Eave and ridge vents form the most effective combination and give greatest protection against rain and snow penetration. The architect would do well to study the methods used in the South, many of which are little known in the northern areas of the country. In any event, adequate attic ventilation is an important summer comfort factor and an assurance against condensation.

The contribution that insulation makes to greater summer comfort is,



"eave and ridge vents form the most effective combination . . ."

of course, well known, but the architect should be familiar with the characteristics of the different kinds of insulation material so that each can be used most effectively for both summer and winter comfort. The average specification tends to utilize one material only throughout the structure—probably due to the persuasiveness of the salesman for that particular material—rather than to combine the different materials more efficiently. Reflective materials are most effective as resistance to heat flowing downward and hence should be used, probably in combination with blankets or batts, in attics for summer protection and in floors for winter. The foils are effective vapor barriers and can be used to advantage in walls as well as floors and ceilings for this purpose, as well as to increase the resistance to heat flow.

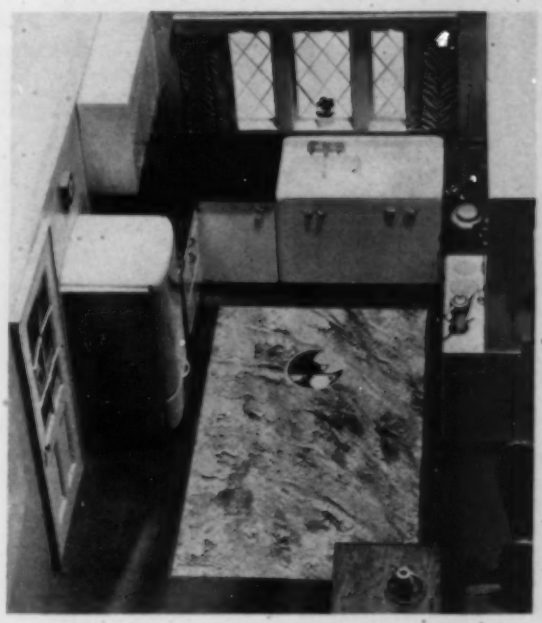
The full realization of all of the advantages of new devices, materials and systems to the home owner can be accomplished most effectively through the architect. Homes designed by the architect and built under his supervision set the pattern for mass-produced housing. They become models and the equipment used in them establishes criteria for housing constructed without the direct benefit of specific architectural guidance. Intelligently selected and properly installed, the newer systems of heating and cooling should contribute importantly to the greater comfort and convenience of the American home owner. Too much complication should be avoided. Generally the simplest systems are better. They can be made to work best if their design is incorporated in the original design of the structure itself.

KITCHEN PLANNING

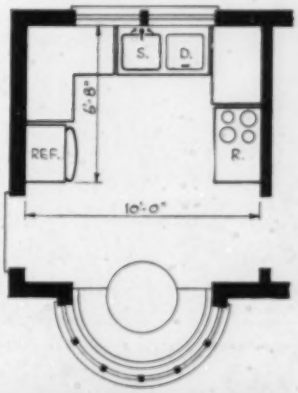
for Flexibility with Standard Plans

By Victor Civkin, A.I.A.

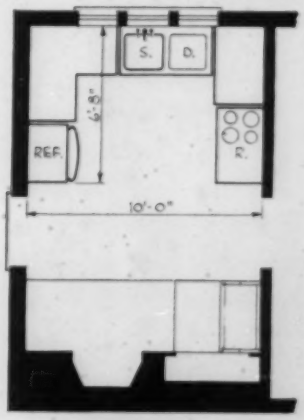
Long experience in kitchen planning indicates the wisdom of considering the kitchen as a unit of certain size and type rather than arbitrarily planning a room and trying to fit kitchen equipment into it. On this page for instance, there are two variations of the same basic U-type kitchen, standardized as to size and equipment and sequence of use, yet quite different in style and feeling to suit the needs or desires of the particular owner or architect. On the following page is still another variation, using the same standard kitchen but combining it with a laundry, snack bar, and a dining alcove. In each case the standard is a 10 ft. by 7 ft. space with work centers and equipment identical. The variations are



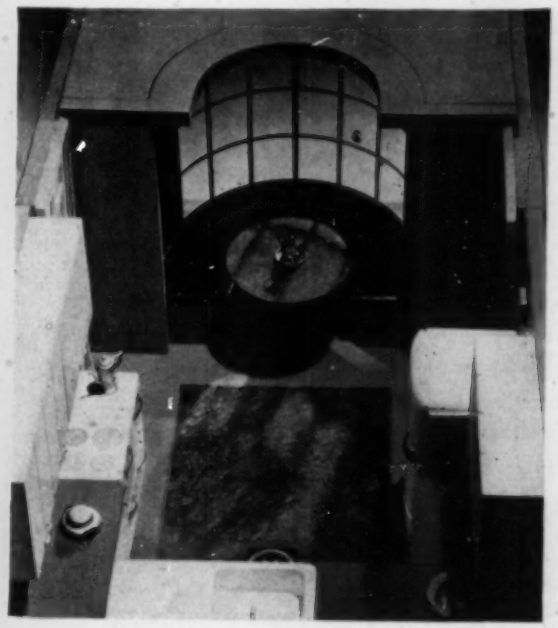
Photos of models, courtesy General Electric Co.

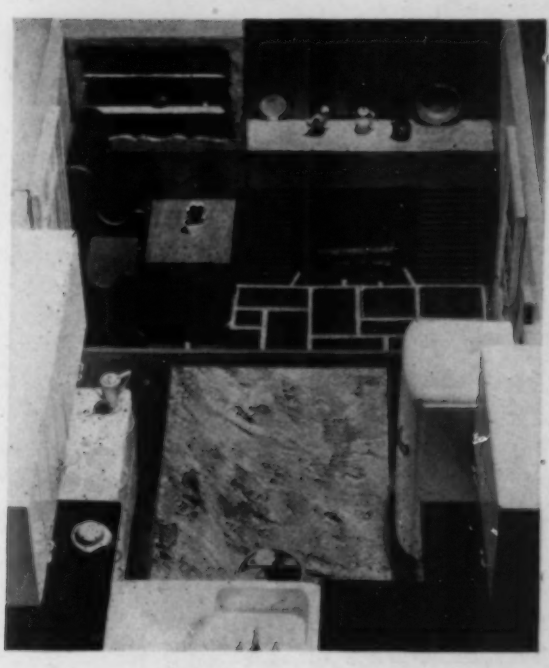


A "U" type plan, service entrance at left, dining room door at right, dining bay on free wall



Same "U" kitchen with changed fenestration and architectural treatment; photos above and below





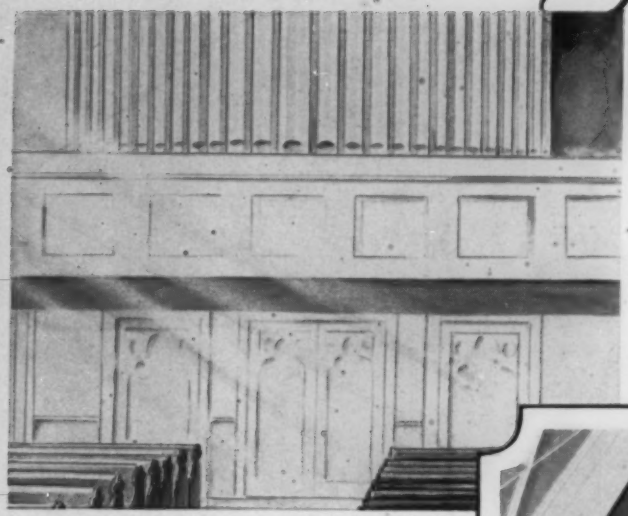
BROOKLYN, N. Y. CHURCH

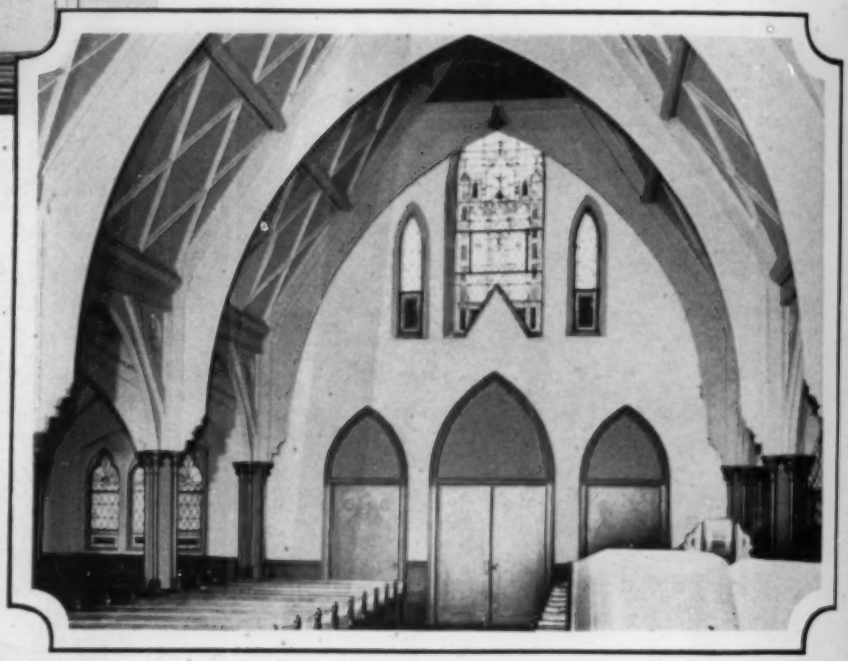
Solves Double Problem

BY INSTALLING AN

ORGATRON

A better blending of choir and organ music . . . a marked improvement in Church Beauty!





BEFORE: (*Above*) Over the rear of the church a balcony, supporting the old organ pipes, obscured the wall arch, three door arches and the beautiful stained glass windows.

AFTER: (*At Right*) Elimination of the pipe organ and supporting balcony brought into view the full beauty of all arches, doors and windows.

Rich full organ music from the Orgatron which is located behind the altar is carried by concealed speakers mounted horizontally along peak of chancel and church ceiling.

Organ music carried to transept by auxiliary speakers located behind wall grille.

PRIOR to the installation of an Orgatron in Brooklyn's Church of the Good Shepherd, the church's pipe organ console and choir were in the sanctuary but the organ pipes (*for lack of space in the chancel*) were located in the rear of the building. The result was a lag between the time when a note was played and when it was heard by the organist and the choir. Poor co-ordination of singers and organ music proved confusing to the organist, the choir and the congregation alike.

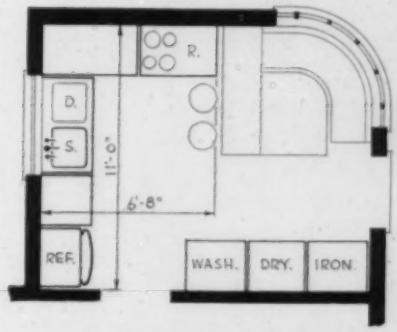
Installation of an Orgatron in the chancel with the choir put the organ music where it belonged. The finer blending and synchronizing of voice and organ, plus the resulting enhancement of the church interior solved a double problem for this prominent church.

Architects desiring to learn more on the space-saving, money-saving qualities of an Orgatron, the only electronic organ with true church organ tone, are invited to write The Rudolph Wurlitzer Company, Orgatron Division, Dept. 1101, North Tonawanda, New York.

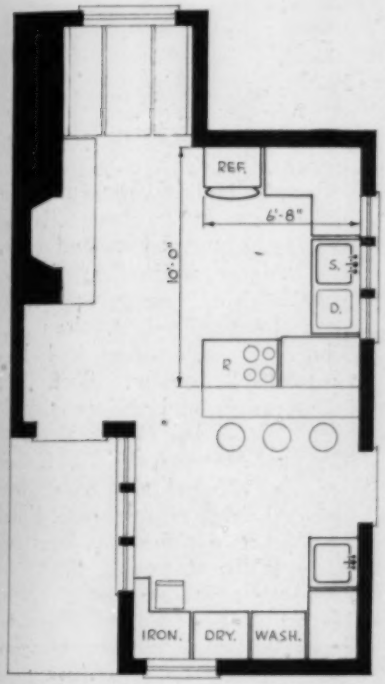
WURLITZER ORGATRON

KITCHEN PLANNING

continued



A standard "L" type plan permitting snack bar, dining alcove and laundry equipment



The "U" plan with snack bar backing up range side and providing spacious laundry. (Door to dining room should be next to fireplace)

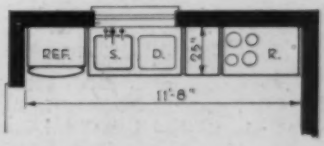
not in the kitchen layout itself, but in the remaining portion of the room and in the architectural or decorative treatment. The U-type kitchen plan is one of three basic types, the other two being the "straight line" and the L-type, both of which are shown on this page.

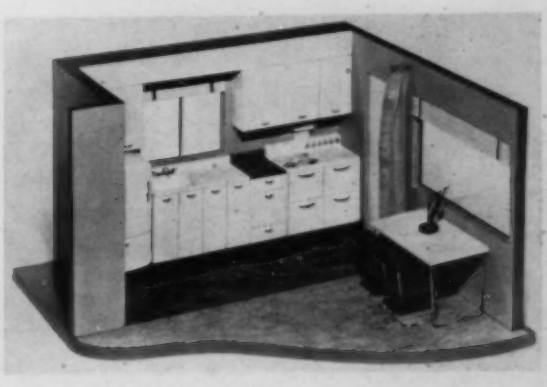
The standard kitchens, shown here in plans and photographs of models, have their equipment arranged in the time-tested, practical, step-saving order of (1) refrigerator and storage, (2) sink and dishwasher, (3) range. These are connected by cabinets with counter-tops, and have further cabinets above the sidewall working counters.

The "straight line" kitchen unit-plan is suitable for minimum kitchens. As it takes but one wall, there is maximum possible variation on the other walls. The "L" type standard plan, occupying two walls, leaves the other two for other purposes—dining, laundry, etc.

Any one of the three standard types, or kitchen-plan-units, can be used as the major and determining factor in establishing the size and shape of the kitchen. This procedure is recommended as standard practice as it saves time and assures a practical kitchen layout in which standard equipment will fit without waste space.

The standard "straight line" kitchen arranged along one wall





 (Continued from page 13)

Mr. Klutznick said, "the federal policy under the leases will be to give the owners an opportunity to recover immediate possession by purchasing the unexpired lease contracts at fair value where consistent with the best financial interests of the government." Where it is not possible to reach an agreement with the owner on a fair sales price, the government will continue to operate the property for the balance of the lease term in order to achieve maximum recovery of public funds.

Any lease cancellations entered into will be subject to the rights of present tenants, including OPA regulations on rents and occupancy.

ARCHITECTURE EXHIBIT PRESENTED TO RUSSIA

An exhibition on American architecture was presented on October 25 to the Hon. Pavel P. Mikhailov, Consul-General of the U.S.S.R. at the Soviet Consulate, New York, by the Architects Committee of the National Council of American-Soviet Friendship and the U. S. Office of War Information.

The presentation was made at a reception attended by 200 architects and representatives of American firms who contributed material to the exhibition. From the Consulate it is being shipped directly to the Soviet Union, since government regulations provide that it may be exhibited only on Soviet territory. It will be shown throughout the Soviet Union following an opening in Moscow.

The exhibit consists of an introduction and a series of nine sections covering the following phases of American building: transportation, homes, industry, commerce, social (hospitals, schools, recreation, community centers), administration, farms, cities and regional planning. Included are 40 panels, 4 by 6 ft. each, with Russian captions.

Douglas Haskell, associate editor of the ARCHITECTURAL RECORD, is picture and text editor; layout and construction designer is Frederick J. Kiesler. The advisory committee included Dean Joseph Hudnut, dean of the School of Architecture and Design, Harvard University; Prof. Talbot Hamlin of Columbia University; Mary Goldwater; Ethel Holm; Vernon DeMars and Hermann H. Field.

Among the architects whose work is included in the exhibit are: Fellheimer & Wagner; Holabird & Root; Royal Barry Wills; George F. Keck; Frank Lloyd Wright; Harwell Hamilton Harris; William Wilson Wurster; Albert Kahn Inc.; Reinhard, Hofmeister, Corbett, Harrison, MacMurray, Hood and Fouilhoux.

NEW YORK TACKLES TRAFFIC PROBLEM

With the recent setting aside of several major crosstown streets for express thoroughfares, New York City has inaugurated a program to solve its ever-increasing traffic problem. Additional crosstown express streets are expected to be designated shortly.

Meanwhile the Regional Plan Association has made public an elaborate program of legislative and administrative changes intended to solve the problem in its entirety rather than piecemeal. Among its proposals are the following:

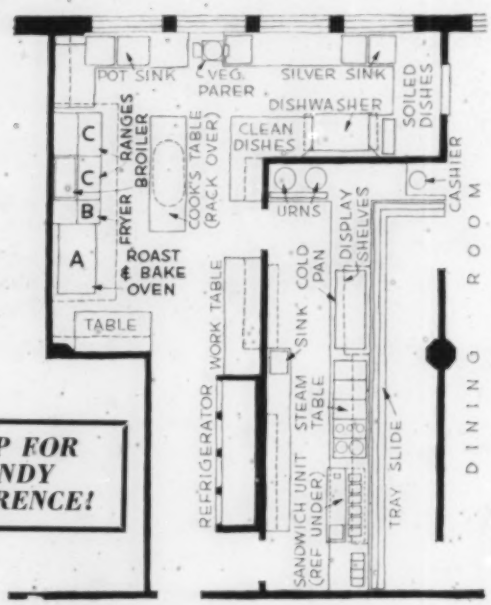
1. Require existing buildings to install offstreet truck-loading berths where practicable.
2. Amend the Zoning Resolution to permit parking garages in business and retail districts if properly designed and located.
3. Establish an administrative agency

(Continued on page 136)

KITCHEN PLAN NO. 30:

Thirtieth of a series of successful mass-feeding kitchen plans.

Mr. H. P. Rung, designer of the cafeteria kitchen installed at the New York Journal American, and illustrated below, states "This plan could easily be taken as it is, and installed in any restaurant."



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COOKING EQUIPMENT USED:

(a) 1 NO. 959 BLODGETT GAS-FIRED ROASTING AND BAKING OVEN
(b) 1 gas fired deep fat fryer
(c) 2 ranges with salamander broiler

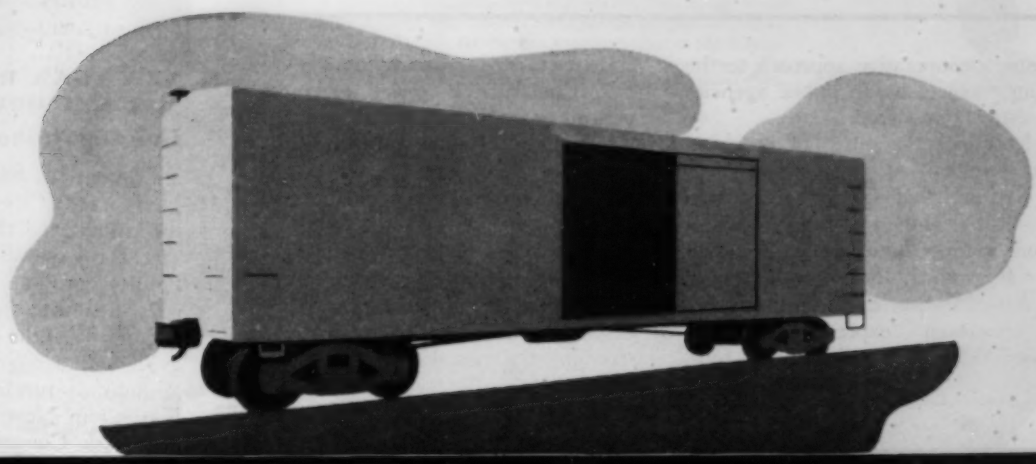
Designed by: H. P. Rung, Kitchen Equipment Engineer, Nathan Straus-Duparquet, Inc., New York, N. Y.

The flexible operation of limited-space kitchens depends upon the type of equipment installed. Here the BLODGETT No. 959 BAKING AND ROASTING OVEN with two sections, one for baking and one for roasting, saves time, space and steps. For details and specifications of BLODGETT OVENS consult your equipment house or write

The G. S. BLODGETT CO., Inc.

53 Maple Street **Burlington, Vermont**

Reprints of this new series will soon be available to architects on request.



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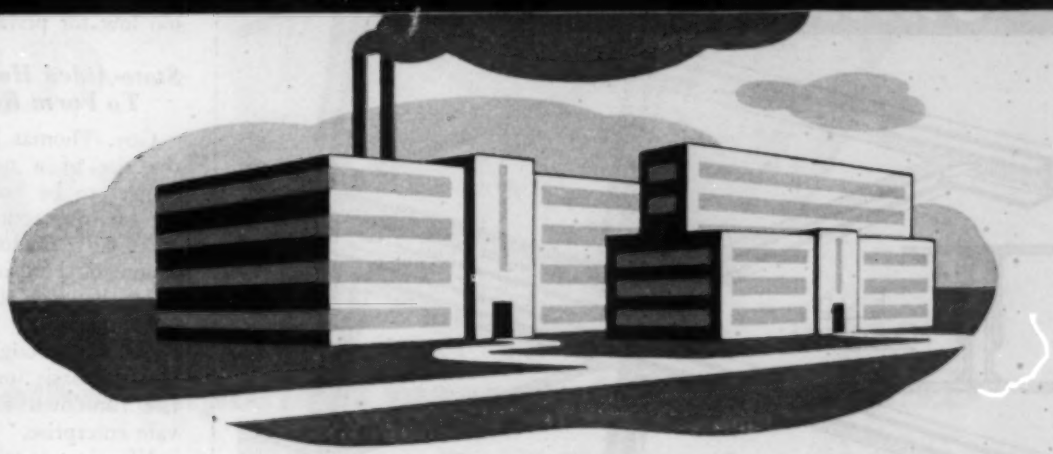

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KIMPREG adds the following advantages to plywood: 1) increases durability and flexural strength; 2) provides resistance to moisture and vapor; 3) armor-plates against extreme abrasion; 4) diminishes grain-raising effects; 5) makes the material scuffproof, splinterproof, snag-resistant; 6) affords a stainproof, washable, "wipe clean" surface; 7) creates resistance to chemical action, decay, temperature-extremes, fire, vermin, and mold. Moreover, it is warm to the touch, does not have the chill "feel" of metal surfaces.

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 (Continued from page 134)

to assure a cooperative approach to the parking problem by all public agencies most directly involved.

4. Legalize the use of parking meters.

5. Require that storage and classification of less-than-truckload freight be done within buildings rather than on the sidewalks in the central districts.

6. Establish a series of 10 improved-type crosstown "express" streets in midtown Manhattan, cleared for four-abreast traffic in rush hours.

7. Construct a series of modern parking garages at central points; approximately 24 new garages, each of not over 4,000 car capacity, would meet the prewar needs of the central area.

8. Provide neighborhood offstreet truck-loading berths to serve groups of buildings in the same block.

9. Relieve crosstown traffic by constructing additional links in the city's system of expressways.

10. Provide union bus terminals to serve inter-city bus lines.

NEW YORK WILL EXPAND PUBLIC HOUSING PROGRAM

Housing Authority's Proposals

Edmond B. Butler, chairman of the New York City Housing Authority, has announced the Authority's proposals for expanding the city's public housing program. Among them:

1. Encourage public support of the Wagner-Ellender Bill.

2. Ask Congress to increase the amount of funds available for public housing in New York City.

3. Ask Congress to include a provision for unsubsidized public housing to rent at about $10.00 a room a month for that group whose income is too high for subsidized public housing and too low for private housing.

State-Aided Housing To Form Rehabilitation Basis

Gov. Thomas E. Dewey, inspecting the site of a new low-rent housing project to be built with state aid in the Melrose section of the Bronx, New York City, disclosed that the State Division of Housing hereafter will require that new state-aided public housing projects in New York City and elsewhere throughout the state constitute the basis for rehabilitation of entire run-down neighborhoods by private enterprise.

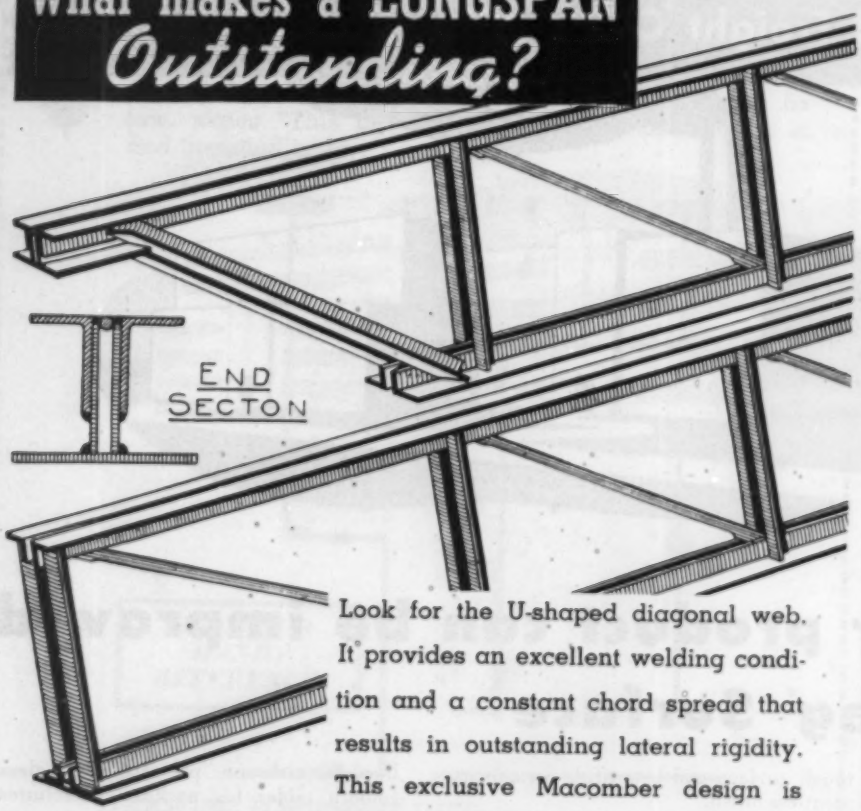
Warning against unplanned and haphazard building such as characterized the construction boom following the conclusion of World War I, the Governor said that it was imperative to coordinate neighborhood planning and home construction by private developers with public building and improvement so that large blighted areas can once again become livable neighborhoods.

Gov. Dewey warned that the building of temporary housing might create new slums and that there was danger that pressure might be exerted to make the temporary housing permanent. He said that the solution of a temporary problem must not be permitted to create another greater one in its stead, but pointed out that the replacement of slum dwellings by decent homes was being delayed because of lack of adequate housing to which to move the displaced residents.

The State Division of Housing has formed a Panel of Community Consultants including among its members Henry S. Churchill, Arthur C. Holden, Ely Jacques Kahn, William Lescaze, Ralph Walker, all of New York City; Dean Lemuel C. Dillenback of the

(Continued on page 138)

What makes a LONGSPAN *Outstanding?*



Look for the U-shaped diagonal web. It provides an excellent welding condition and a constant chord spread that results in outstanding lateral rigidity. This exclusive Macomber design is made in underslung or square end types with sloping or parallel chords in lengths up to 70 feet. Here is a completely standardized structural unit, specified from load and span tables for unobstructed floor or roof support. Get our complete design information for your next project.

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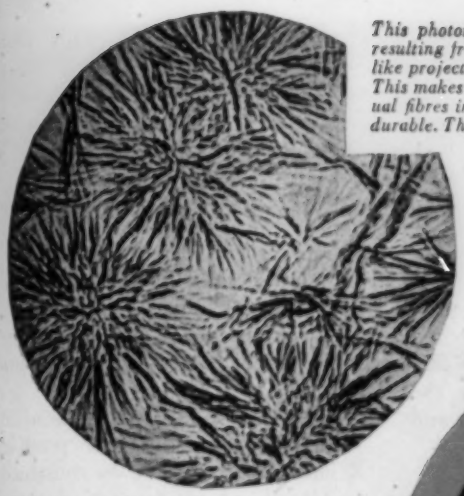
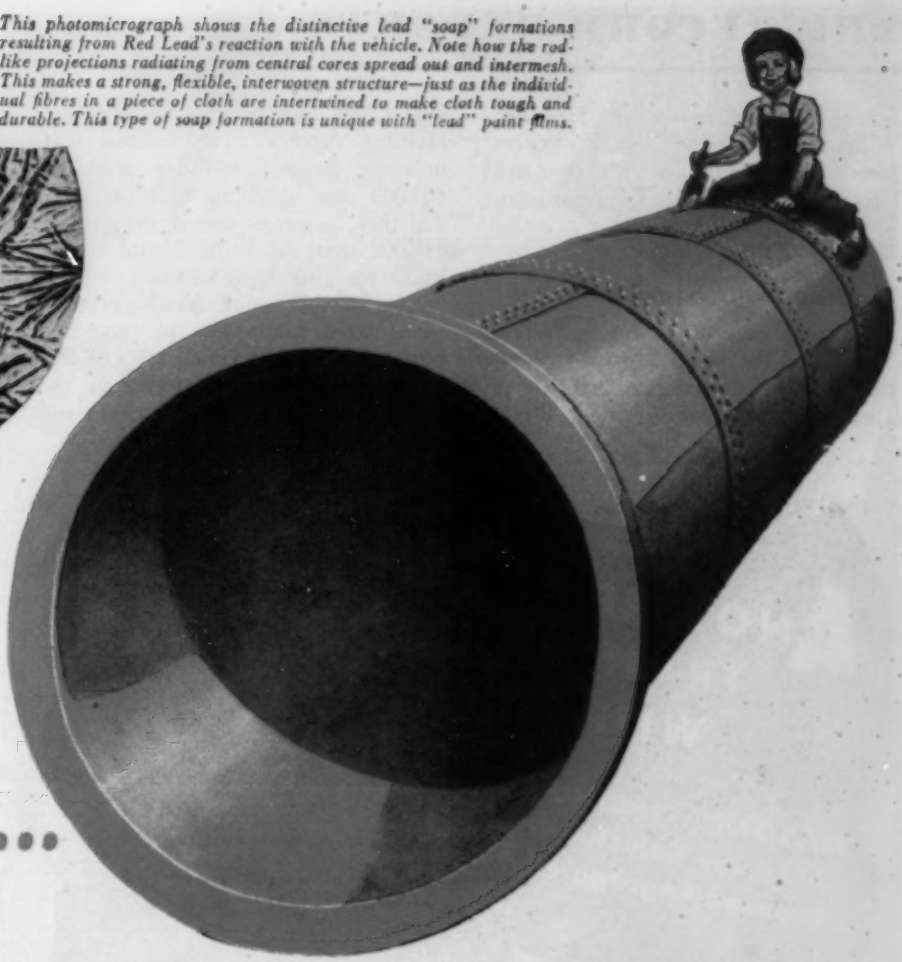


This photomicrograph shows the distinctive lead "soap" formations resulting from Red Lead's reaction with the vehicle. Note how the rod-like projections radiating from central cores spread out and intermesh. This makes a strong, flexible, interwoven structure—just as the individual fibres in a piece of cloth are intertwined to make cloth tough and durable. This type of soap formation is unique with "lead" paint films.



unique LEAD SOAPS...

another important reason why RED LEAD means Extra Rust Protection

Why is Red Lead outstanding as a metal protector?

One of the major reasons is this pigment's remarkable ability to impart to the paint film strong, tough, intertwining lead "soap" formations—as shown in the photomicrograph above.

These unique lead "soaps" improve the paint film in many ways. For one thing, they form a dense, intermeshing matrix which restricts the passage of water through the film. And rusting does not take place without the presence of moisture.

For another, they *mechanically* reinforce the film, giving it extra *strength* and *toughness*.

And again, Red Lead "soaps" contribute all-important *elasticity* – allowing movement along their intermeshing projections. This action helps prevent the ruptures to which a hard, unyielding film is subject. Moreover, when a paint film dries and ages, decomposition of the vehicle sets in. But, because of Red Lead's ability to combine with the decomposition products and form soaps, it increases both the durability of the paint film and its adhesion to the base metal.

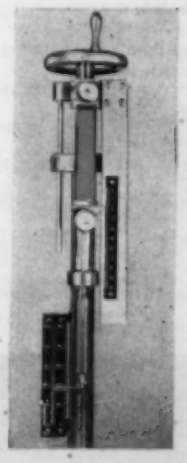
Red Lead's extra strength, toughness and elasticity are demonstrated by the tensile strength test below and substantiated by exhaustive research and field service.

Remember, too, that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including phenolic and alkyd resin types.

Specify RED LEAD for All Metal Protective Paints

The value of Red Lead as a rust preventive is most fully realized in a paint where it is the only pigment used. However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint.

* * *



In this tensile strength tester a typical Red Lead paint film has been stretched 18% without breaking. In withstanding this elongation it has maintained a load of 920 grams. Any film that exhibits these characteristics has unusual strength, toughness and elasticity. As metals expand and contract only a fraction of one per-cent, this film would adhere under the most extreme conditions.

No matter what price you pay, you'll get a better paint for surface protection of metal, if it contains Red Lead.

Write for New Booklet—"Red Lead in Corrosion Resistant Paints" is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas—ranging from Red Lead-Linseed Oil paints to Red Lead-Mixed Pigment-Varnish types. If you haven't received your copy, address nearest branch listed below.

* * *

All types of metal protective paints are constantly being tested at National Lead's many proving grounds. The benefit of our extensive experience with Red Lead paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6, Buffalo 3, Chicago 80, Cincinnati 3, Cleveland 13, St. Louis 1, San Francisco 10, Boston 6 (National-Boston Lead Co.); Pittsburgh 30 (National Lead & Oil Co. of Penna); Philadelphia 7 (John T. Lewis & Bros. Co.); Charleston, W. Va. (Evans Lead Division)

DUTCH BOY RED LEAD

School of Architecture of Syracuse; William C. Kaelber of Rochester; James W. Kideney of Buffalo; and George B. Cummings of Binghamton.

NHA NOTES

Housing Study Issued

Housing experience during World War I and the boom and collapse period which followed are analyzed in a new bulletin, *Housing After World War I,* just completed by the National Housing Agency. The bulletin tells how the housing industry produced 405,000 new dwelling units in 1919 and then, as prices soared, dropped to 247,000 units in 1920 — and briefly traces the underlying causes.

One of the major drawbacks to a more rapid resumption of peacetime business and construction after World War I was the uncertainty over the future course of commodity prices and construction costs, the study found. Wholesale commodity prices by the end of the war had risen to double the 1914 or prewar level; construction costs had gone up 50 to 75 per cent. During World War II much greater success was achieved in "holding the line" on prices despite the far greater war effort. Although there have been substantial rises in wholesale commodity prices — up 37 per cent — and construction costs — up 33 per cent — they have advanced far less than in World War I.

Again, wartime federal controls on commodity prices, on the production of non-war goods and on construction, and localized rent control during the first World War were far less effective, the study shows, and were in force for a much shorter time than in the war just ended. They were removed immediately after the end of the war, but there was no immediate burst of peacetime activity. Prices eased off, business activity declined and unemployment developed.

Many of the same elements which sparked the boom in 1919 are present today and in greater force, the NHA bulletin declares. The country has gone through a greater and longer war with more shortages of civilian goods during the war. There is a much larger reconversion problem with more deferred demand backed by considerably larger liquid assets. On the other hand, the country's productive capacity to meet the demand far exceeds the capacity of the economy after World War I.

Financing Again Available

Prewar financing facilities under the FHA program are again available to home owners, all restrictions on loans for repairs and improvements having been removed, and limitations on the use of materials for such purposes having been lifted. Such loans may be for maximum amounts of $2,500, may run for a maximum term of three years, repayable in monthly installments.

Departments Cooperate

An agreement designed to avoid duplication of effort and calling for a continuous exchange of data and information has been reached between the Department of Commerce and the NHA.

The agreement covers working relations between the recently established Construction Division in the Department's Bureau of Foreign and Domestic Commerce and the NHA. Highlights:

1. The NHA will provide a summary of the data and analytical infor-

(Continued on page 144)

ANOTHER "MAGIC" TRANSFORMATION WITH— Mo-Sai

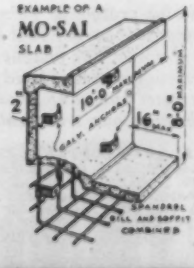
MASONRY FACING SLABS— Colorful Exposed Aggregates

MO-SAI over old brick on Wickert Bldg. Escanaba, Mich. Green base, buff facing, green vitreous letters. Architects: Hubert & Gielsteen. Contractor Mike Rettman. Slabs: Badger Concrete Co.

HERE'S NEW FREEDOM IN DESIGN FOR YOU— *plus structural soundness*

These "thin" pre-cast reinforced concrete units, made of selected aggregates exposed in a matrix of white or colored portland cement, can enchance the appearance and value of existing stores, shops and other buildings. Color is limited only by the aggregates— quartz, granite, ceramics and vitreous. Exposure of the aggregates after casting creates varied and interesting textures.

Slabs up to 100 sq. ft. or more in size; and curves, channels, angles and combinations of returns and reveals can be cast in a single unit. Hooks and anchors for attachment are cast integrally with the slab. Since over-all thickness is only 2 inches, it is often possible to retain existing walls and still stay within building lines. MO-SAI is widely used in both remodeling and new construction.



SEE OUR CATALOG IN SWEETS OR CONSULT YOUR NEAREST MO-SAI MANUFACTURER

MO-SAI ASSOCIATES

New Haven, Conn.	The Dextone Co.	P. O. Box 606
Boston, Mass.	Cambridge Cement Stone Co.	156 Lincoln St.
Philadelphia, Pa.	Formigli Arch'l Stone Co.	R. E. Trust Bldg.
Richmond, Va.	Economy Cast Stone Co.	P. O. Box 1223
Greensboro, N. C.	Arnold Stone Co., Inc.	P. O. Box 477
Oshkosh, Wisc.	Badger Concrete Co.	191 Marion St.
Salt Lake City, Utah.	Otto Buehner & Co.	640 Wilmington Ave.
Cleveland, O.	The Geo. Rackle & Sons Co.	Newburg Sta.
Rochester, N. Y.	Goodstone Mfg. Co. Inc.	470 Hollenbeck St.

Mo-Sai MO-SAI ASSOCIATES, founded to standardize and improve architectural slabs. The trade-mark "Mo-Sai" Reg. U.S. Pat. Off. is the property of The Dextone Co.

A Forward Step to Increased Shoe Sales
A Valuable Investment in the Modern Factory Office
A Boon to Apparel Shops
A Tonic for Hard-To-Rent Hotel Rooms
An Aid to Physician and Patient
A Revenue Producer for Small Apartments
CHRYSLER AIRTEMP

For Your Files on Air Conditioning

Chrysler Airtemp has prepared a valuable set of specially drawn isometrics for architects' reference file on air conditioning. These drawings show specific applications of "packaged" air conditioners in a wide variety of carefully chosen business establishments. The installation drawings have been reprinted and bound for your convenience. The book also contains practical information about the time-tested, easily-installed Chrysler Airtemp "Packaged" Air Conditioners.

You can obtain a complete set of drawings without cost or obligation by filling out and mailing the coupon.

Invest in Your Future—Buy Victory Bonds—"Listen to the music of Andre Kostelanetz Thursdays, C.B.S., 9.00 p.m., E.S.T."

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HEATING • COOLING • REFRIGERATION

CHRYSLER CORPORATION
AIRTEMP DIVISION, 1119 LEO STREET
DAYTON 1, OHIO, DEPT. 1120

GENTLEMEN: Please send me without cost or obligation a set of typical installations of "Packaged" Air Conditioners.

NAME_____

ADDRESS_____

CITY, ZONE, STATE_____

☐ ARCHITECT ☐ ENGINEER ☐ CONTRACTOR OR BUILDER

 (Continued from page 22)

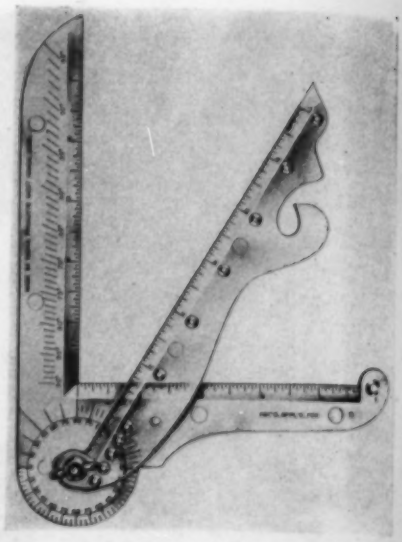
DRAFTING AIDS
Slide Rule

The *Deci.Point,* a slide rule which places the decimal point in involved expressions with results up to 19 places, is now being manufactured of lightweight Dowmetal (magnesium metal alloy), surfaced with a flat white plastic said to be impervious to water or chemicals and virtually immune to abrasion from regular use. The rule first was introduced in a wartime "Demonstrator" model. Pickett & Eckel, 53 W. Jackson Blvd., Chicago 4, Ill.

All-Purpose Device

An all-purpose drawing and measuring device, the *Parva-graph,* is accurately designed and mathematically calibrated to serve as a square, dividers, protractor, triangle, ruler, compass, French curve and miter.

The Parva-graph consists of a combination square and a removable miter arm which can be mounted on the square through either of two mounting holes. A wing nut locks the arm at any desired position. Made of tough, transparent plastic. Parva Products Co., West Haven, Conn.



Versatile drawing and measuring aid

METAL WINDOWS
Storm Sash Storage

Manufacture of the *Rusco All-Metal Combination Window* has been resumed, it has been announced, with an important change in design incorporated. Storage of the lower storm sash is now provided within the window unit itself.

The compact unit provides screen, storm sash and weatherstripping, plus a patented spring-steel clip arrangement that permits the lower storm sash to be raised and held in storage space behind the upper sash. The F. C. Russell Co., Cleveland, Ohio.

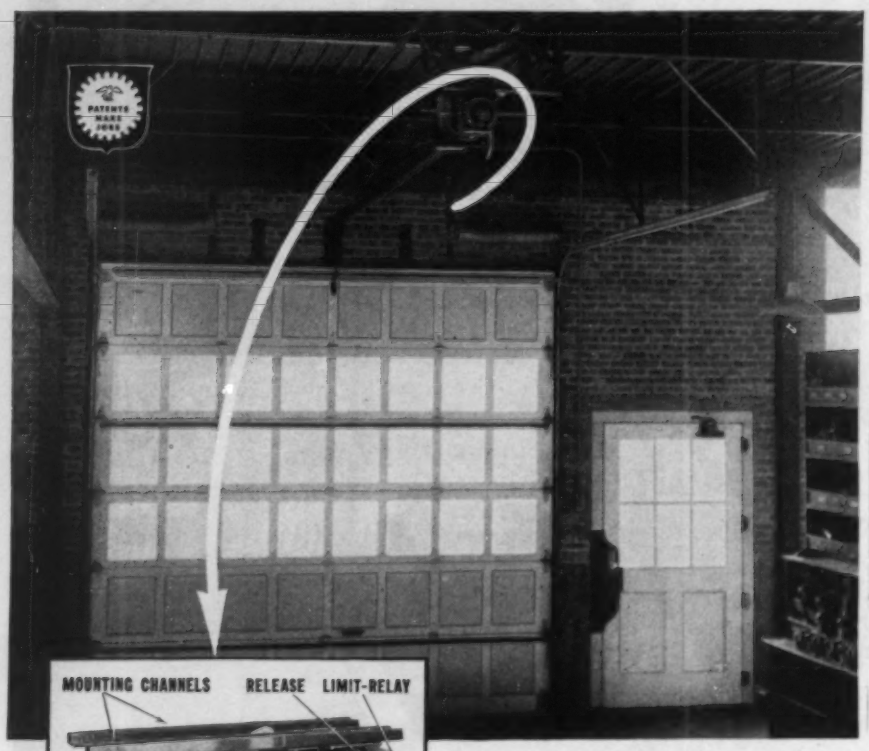
Aluminum Unit

Expected soon to be in production is a new aluminum extruded window unit, the *Winco,* which has no pulleys, weights, cords or springs, and requires no regular weatherstripping. Can be left open in rain or snow, as lower sash swings in. Also made for glass block installations. Watco Engineering, Inc., 2200 Scranton Rd., Cleveland 13, Ohio.

LIGHTING NEWS
Cold-Cathode Lamp

Addition of a cold-cathode K lamp to a regular line of fluorescent products has been announced. The new lamps will be instant-starting, will have a rated life of 10,000 hours. They will be made in both 72 in. and 96 in. lengths, 1 in. in diameter, will operate on a standard 120 milliampere multiple ballast. Sylvania Electric Products, Inc., Danvers, Mass.

(Continued on page 142)



BARBER-COLMAN ELECTRIC
DOOR OPERATOR
SAVES TIME...HEAT...HEALTH

When planning commercial and industrial buildings, be sure to specify *electric operators* for frequently-used doors. Barber-Colman Electric Door Operators have proved their ability to increase efficiency, reduce waste time, save fuel, and improve working conditions. *Ask your Barcol representative for complete details.*

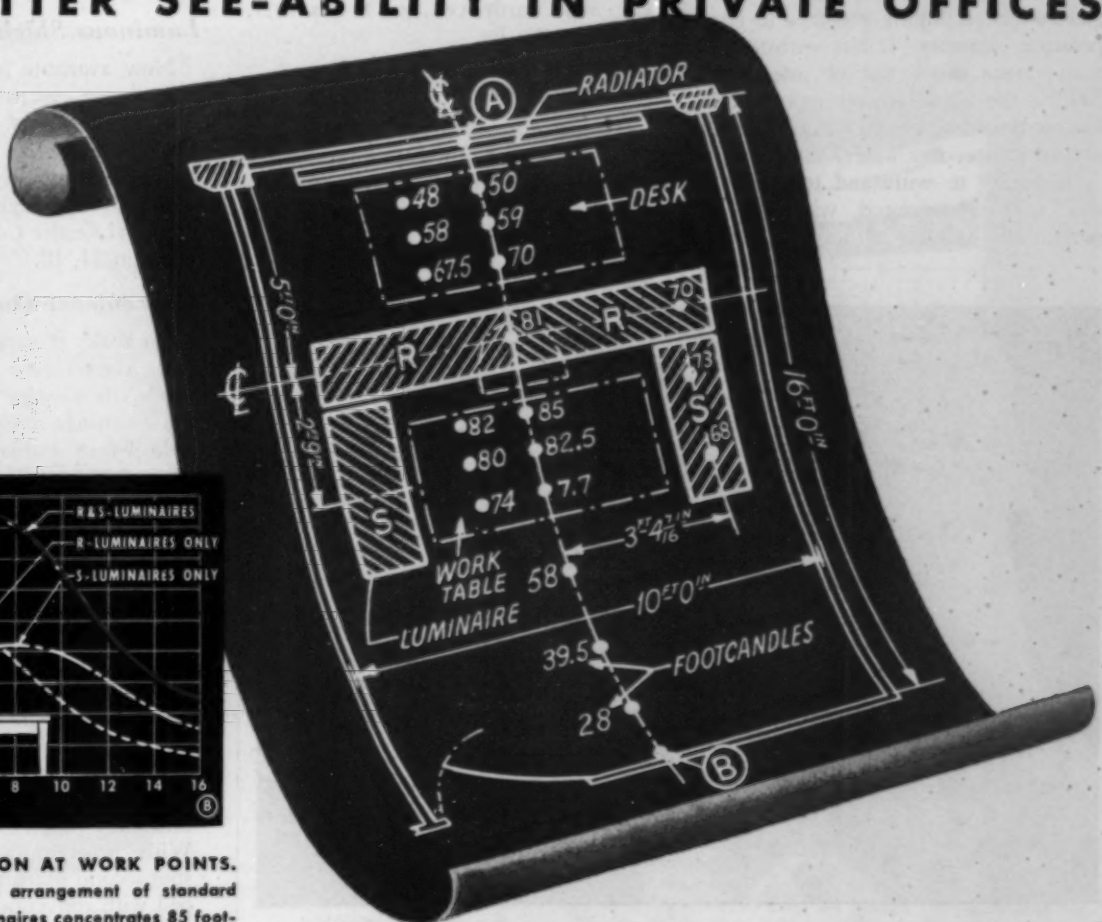
BARCOL

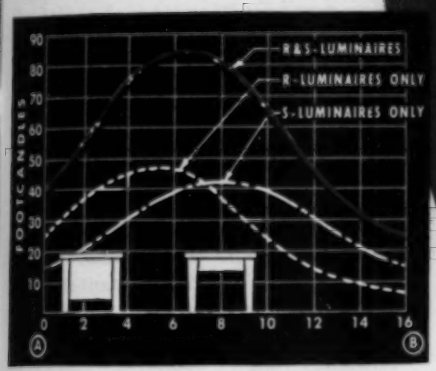
FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILL.

A new lighting yardstick

FOR BETTER SEE-ABILITY IN PRIVATE OFFICES





GREATER ILLUMINATION AT WORK POINTS. An ingenious U-shaped arrangement of standard LW-160 Fluorescent Luminaires concentrates 85 footcandles at the worktable, with about 65 footcandles on the desk. Greater seeing comfort is further provided by a low brightness contrast over the surrounding area. After 1000 hours of burning, the average illumination from A to B was 57 footcandles.

BELOW: Westinghouse LW-160 Fluorescent Luminaires provide a shielded light source and soft diffused illumination. U-shaped arrangement directs reflected glare away from the eyes of the person at the desk.

IN DEVELOPING A NEW LIGHTING TECHNIQUE for private offices, Westinghouse Lighting Engineers had two basic facts to start with. One was that practically all work in an office of this type is carried on by an individual at a desk or worktable. The other was that desirability for utilizing natural daylight makes few locations, other than adjacent to a window, suitable for desk and table.

These engineers concentrated their efforts on providing maximum seeing comfort to the person working at the desk or table. This was accomplished by having an abundance of illumination at the work points, as shown by footcandle distribution chart at the left. At the same time, direct and reflected glare are eliminated with proper control of brightness.

Such achievement proves that good lighting is not the result of good lighting fixtures alone, but is a product of correct fixture design *plus application know-how.*

Bulletin B-3662 describes this new lighting technique in greater detail. For a free copy of this helpful bulletin, contact your nearest Westinghouse Office, or write direct to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-04068

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Lighting Equipment

AVAILABLE THROUGH 127 WESTINGHOUSE ELECTRIC SUPPLY CO. OFFICES AND INDEPENDENT DISTRIBUTORS

FOR BETTER BUILDING

(Continued from page 140)

Bathroom Spot Heater

A new infrared lamp producing radiant heat is built of special ruby red glass which is highly resistant to temperature extremes. It has withstood a temperature shock test of more than 500°F., the manufacturer reports, and has continued to burn even after being dipped in ice cold water.

Its ability to withstand temperature shocks, it is suggested, will make it particularly suitable as a spot comfort heater for the bathroom, where it is apt to come in contact with water drops. Westinghouse Electric & Mfg. Co., 306 Fourth Ave., P. O. Box 1017, Pittsburg 30, Pa.

Downlighting

To provide downlighting which is particularly useful in store illumination, two new silvered bowl lamps have a circular inside frosted "window" at each bulb's end. The lamps are rated 300 and 500 watts. In the former, the downlight filters through a 2¼ in. diameter inside frosted window; the latter has a circular window with a diameter of 3 in. General Electric Lamp Dept., Nela Park, Cleveland.

Luminous Shield

Now available is a patented luminous plastic switch plate shield which will fit over any standard toggle or push button plate and, when exposed to any normal light during the day, will glow all night. Originators Inc. National Outlet Co., 612 N. Michigan, Chicago 11, Ill.

Convenience Outlet

To make it easier to find and plug into convenience outlets, the new *LumiNite Duplex Convenience Outlet Plate* features a small shielded electric bulb which burns continuously. The plate is molded in a single piece of ivory plastic, will fit any standard duplex convenience outlet. Associated Projects Co., 80 E. Long St., Columbus 15, Ohio.

Starter

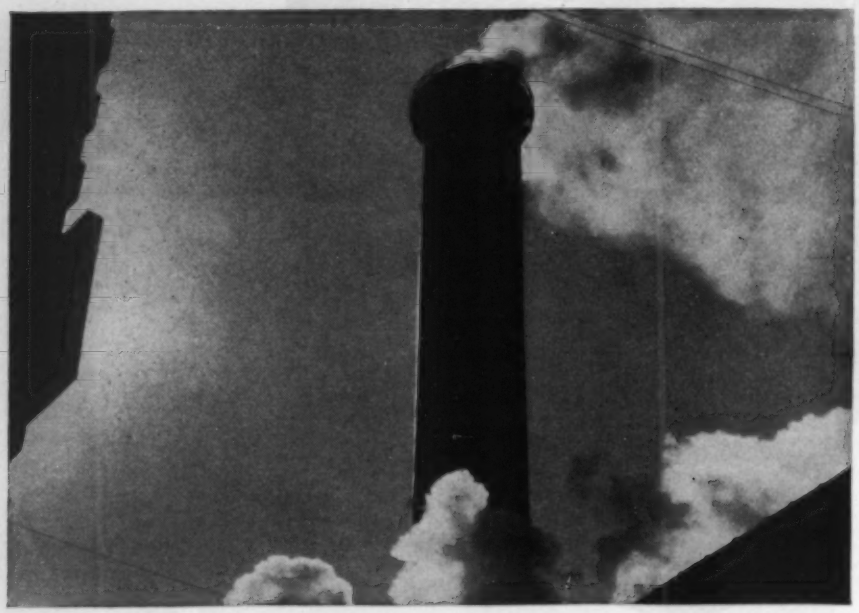
A new split-second starter for fluorescent lamps, the *Jack Rabbit,* is designed to fit in conventional starter sockets for use with instant-starting lamps. The split-second starting action, it is claimed, is accomplished with unusually high operating efficiency. With it, manufacturers can provide split-second starting in fixtures equipped with conventional low-cost ballasts. It is said to provide approximately 13 per cent greater operating efficiency than high-voltage instant-starting ballast systems. General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.

Ballasts

Two new special ballasts have been announced by one company. One is a single-lamp type, designed for the operation of a new line of 13-watt lamps used primarily in show cases and similar installations; the other is for the instant-starting operation of "Slimline" lamps designed for decorative and special lighting purposes. General Electric Co., Schenectady, N.Y.

HOME FREEZERS

Expected to be available to the general public shortly after the first of January, a 4 cu. ft. cabinet or horizontal model home freezer is 36 in. high, 34½ in. long, and 24 in. wide, weighs 250 lb. Finish is white baked enamel. Slightly less than 1½ kw of electricity are necessary to run the freezer in a normal room temperature, the manufacturers report, for a period of 24 hours. Frigidaire Division, General Motors Corp., Dayton, Ohio.



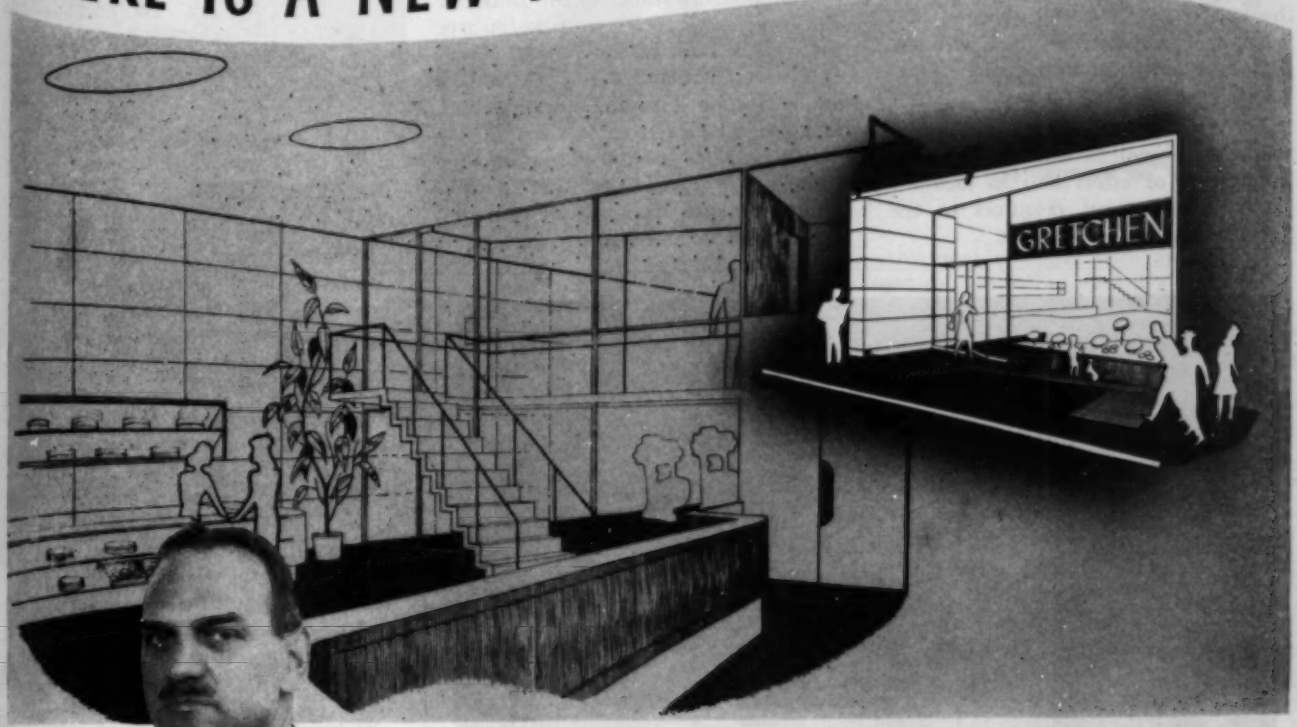
AT LAST!

At last the first smoke of peaceful days streams from America's stacks . . . and we eagerly wait the day when we can tell you that the postwar Von Duprins are ready.

As soon as men and materials are available, these finer devices will begin to come off the assembly lines.

They will be the best devices we know how to build. In them will be incorporated all that we have learned in thirty-seven years of study and effort. These Von Duprins will be the safest, surest, fastest panic devices ever built...and well worth waiting for!

THERE IS A NEW TREND IN STORE DESIGN



Hervey Parke Clark

HERVEY PARKE CLARK'S conception of a Bakery

"The conception of this small production and sales unit is based on the assumption that seeing ideal working and sanitary conditions is an exciting experience for the customer and, therefore, good merchandising for the owner. The sales area is separated from the street by a transparent film (glass) which serves to keep the climate temperate and the air clean inside the store. A similar film divides the working area at the rear from the sales area in the front and confines odors and temperature differentials to the production area —yet customers and manager can readily view all the baking processes.

"The store front is transparent and, both day and night, clearly displays the freshly baked specialties in the shop window as well as affording a full view of the shop's interior. The entire glazed front is set in members of Pittco Store Front Metal.

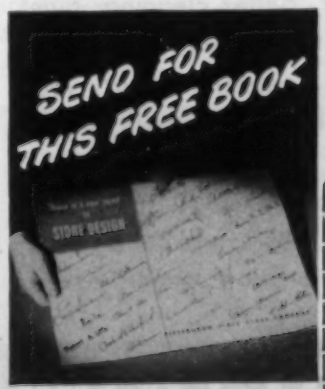
"Inside, the walls of ivory Carrara Glass form a colorful and sanitary background for the sale of bakery products. The mirrored backs of the display cases on the walls instantly show the customer all sides of the cake or pastry she is about to buy. Ivory Carrara Glass walls carry through into the bakeshop where they form a spotless background for production, where cleanliness is essential."

HERVEY PARKE CLARK,
Architect

In creating modern store fronts and interiors of distinction, you can rely upon the high quality and the adaptability of Pittsburgh Glass and Pittco Store Front Metal to help you execute your designs with striking success.

In 21 leading retail magazines, Pittsburgh Plate Glass Company is urging merchants to consult their architects, to modernize their stores *now*. Prompt, helpful service – is provided by our national organization of branches and dealers. If desired, convenient terms can be arranged on the Pittsburgh Time Payment Plan.

"PITTSBURGH"
stands for Quality Glass and Paint



It contains 41 designs, submitted by leading architects, for stores, restaurants, service stations, theaters, etc. Every architect, designer and student will want to own this up-to-date reference book of ideas for building or modernizing retail stores. Send the coupon for your free copy of "There is a New Trend in Store Design." It will be sent to you promptly.

Pittsburgh Plate Glass Company
3034-5 Grant Building, Pittsburgh 19, Pa.
Please send me, without obligation, a free copy of the book, "There is a New Trend in Store Design."

Name_____

Address_____

City_____ State_____

PITTSBURGH PLATE GLASS COMPANY
PRODUCTS FOR STORE FRONTS AND INTERIORS

 (Continued from page 138)

mation available as the result of its activities so that the Construction Division may make the maximum use of this material. The Construction Division will provide the NHA with the data and analytical information it develops.

2. A working liaison between the two agencies will be set up to prevent duplication of effort and to facilitate the combination of resources of the agencies on specific projects.

BUILDING PLANS ANNOUNCED

New Plant

A new truck-trailer plant nearly a half mile long, occupying a 186-acre site, will be built by the Fruehof Trailer Co. at Cleveland, Ohio. Architects are J. Gordon Turnbull, Inc.; contractors, Collins Construction Co.

Fruehof has started a nation-wide campaign to interest architects in planning for motor transport in plant design. A manual is being prepared.

N.Y.U.'s proposed new residence hall

Residence Hall

The New York University College of Medicine has announced plans for a new $750,000 residence hall to be erected at 33rd St. between First Ave. and East River Drive, New York City.

The 10-story building, containing 279 rooms, is one of the six major building units totaling $15,000,000 that will be the university's share of an over-all $27,500,000 New York University-Bellevue Medical Center project.

A special feature of the residence hall will be a three-floor wing, projecting toward the river, devoted to recreation and student activities. Various floors will be devoted to dining, lounging, reading and recreation rooms, and a gymnasium. The roof of the wing will be a large sun deck.

New plant will quadruple facilities

Plant Expansion

A four-fold expansion of plant facilities to meet expected demands for brake linings for postwar passenger cars and trucks was begun recently by the Marshall-Eclipse division of Bendix Aviation Corp. with the breaking of ground for a new factory at Troy, N. Y.

The new plant, now under construction, will be four times larger than all of the present buildings of the division. Providing approximately 80,000 sq. ft. of space, it will cost more than $500,000, is scheduled for completion by next spring.

OFFICE NOTES

Offices Opened and Reopened

Joseph Blumenkranz announces that he is now practicing as architect and hospital consultant with Sidney L. Katz and Taina Waisman as associates. Address, 327 Lexington Ave., New York 16.

(Continued on page 146)

THE SPENCER *Cleaned* SKYLINE

Because few mammoth buildings have been built during the past ten years, some people forget that the majority of the biggest and best buildings of every kind in the country are Spencer Cleaned, including those shown in the New York "Skyline" above.

The reasons include faster, better cleaning; quiet, easy operation and a lower net cost in the long run.

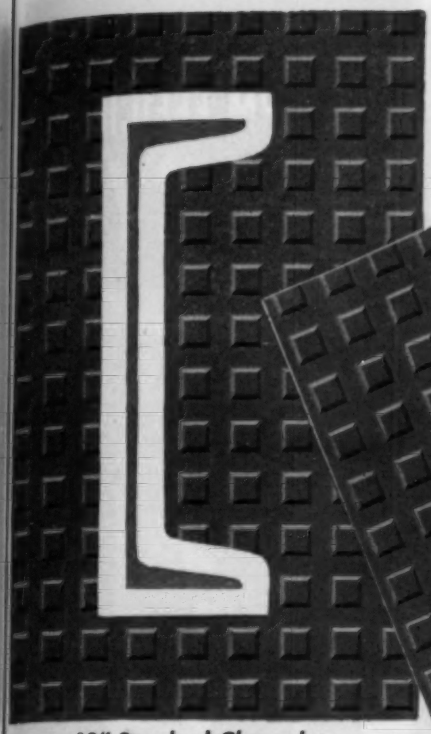
An architect, after using a Spencer for thirty years in his own home, says "It has always been more efficient than the small portables."

Savings in larger buildings are ten-fold. Less dusting, less floor wax used. Radiators, filters, and boilers easily cleaned. Rugs, paint, decorations last longer. Ask for the bulletins.

SPENCER HARTFORD VACUUM CLEANING

THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

J&L JUNIOR CHANNELS AND JAL-TREAD



10" Standard Channel
15.3 Pounds Per Foot

10" Junior Channel
4.5 Pounds Per Foot

For structural strength with minimum weight — Controlled Quality Junior Channels — the lightest rolled steel channels produced. Made in two depths and three weights. For safe, sure footing, to lessen industrial accidents — Controlled Quality Jal-Tread — the "Safety First" rolled steel checker floor plate.

JONES & LAUGHLIN STEEL CORPORATION
PITTSBURGH 30, PENNSYLVANIA

J&L STEEL

A REPORT on the PERFORMANCE of MINWAX CAULKING COMPOUNDS

"They provide greatest amount of satisfactory trouble-free performance"
Walter H. Packard

WHEN re-appraising materials and methods for current maintenance as well as new construction, evidence of long satisfactory performance is a reliable guide to the final selection. The letter at the right, written by one of New England's outstanding waterproofing contractors, emphasizes the type of performance which has made MINWAX Caulking Compounds and Weathercap the first choice of many architects and owners as well as contractors.

Further evidence is contained in a file of job performance reports by the Pittsburgh Testing Laboratories, which we shall be glad to send on request, together with descriptive circular and architectural specifications. Write today for a copy. MINWAX Company, Inc. 11 West 42nd St., New York City 18.

PUBLIC SERVICE BUILDING, BOSTON, MASS.

CHAPMAN WATERPROOFING COMPANY
APPROVED CONTRACTORS FOR
MINWAX
44 HILL TOP STREET ROCHESTER CENTER, 24, MASS.

Minwax Company, Inc. November 5, 1945
New York City 18

Gentlemen:

Answering your inquiry, our experience with Minwax Caulking Compound extends over twenty years and is most satisfactory.

We are now waterproofing the Public Service Building (picture enclosed) using your Caulking Compound for windows and your Weathercap for stone joints. We have found these to provide the greatest amount of satisfactory, trouble-free performance.

During the past twenty years we have used your caulking compound on over one thousand jobs with performance satisfactory to ourselves, the architects, and the owners.

Very truly yours,
CHAPMAN WATERPROOFING CO.
Walter H. Packard

For the 28th Consecutive Year Our Complete Catalog is in Sweet's

Waterproofings
Caulkings • Dampproofings

MINWAX

Wood Finishes
Waxes • Protective Coatings

Heating Dreams Come True . . .

A building free of heating headaches—no early morning complaints of not enough heat; no mid-day reports of too much heat. It's a Building Owners dream to receive even heat all day long—with a saving in fuel.

Many Building Owners have already discovered their answer in the Webster Moderator System of Steam Heating. There's no overheating; no underheating . . . No costly waste of fuel. Continuous heat flow from every radiator maintains comfortable heating at all times.

"Control-by-the-Weather" is provided by an Outdoor Thermostat which automatically balances the heating rate to agree with changes in outdoor temperature.

More Heat with Less Fuel

Seven out of ten large buildings in America (many less than ten years old) can get up to 33 per cent more heat out of the fuel consumed! . . . If you are planning on a new building or on the modernization of an existing building, you will be interested in "Performance Facts" — a book of case studies, *before* and *after* figures, on 268 Webster Steam Heating installations. Write for it today. Address Dept. AR-12.

WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Representatives in principal Cities : : Est. 1888
In Canada, Darling Brothers, Limited, Montreal

Fuel-Saving Starts With CONTROL

AUTOMATIC Webster Heating Systems

THE RECORD REPORTS

(Continued from page 144)

W. B. Cohan, R. A., has opened offices for the practice of architecture, structural engineering and industrial design at 624 S. Michigan Ave., Chicago 5.

Raymond A. Coolidge, Architect, announces the opening of his office at 640 New England Bldg., Topeka, Kans., after 3½ years with the War Department.

S. Harold Fenno, A.I.A., and Stanley C. Podd, A.I.A., have opened an office for the practice of architecture under the firm name of Fenno and Podd. Address, 525 Delaware Ave., Buffalo 2, N. Y.

George M. Foulks, R.A., returned to the practice of architecture on Oct. 15. Address, 625 Twelfth St., N.W., Canton 3, Ohio.

E. Ellsworth Giles, Architect, has announced the opening of an office at 113 Morristown Rd., Bernardsville, N. J.

T. Tardy Hart announces his return to the practice of architecture in association with I. Wm. Ricciuti. Address, Queen & Crescent Bldg., New Orleans 12, La.

Faion E. Lott, Architect, has opened an office at 12 E. Pleasant St., Baltimore 2, Md.

Harry Ray Nay, R. A., has resumed his architectural practice with a business office at 710 Hawley Bldg., Wheeling W. Va., and his working studio on Cadiz Pike, R.F.D. #1, Martins Ferry, Ohio.

Samuel Pelton, Architect, has reopened his office at 427 N. Broad St., Elizabeth, N. J.

Eugene John Stern, A.I.A., has established an office in Mexico City under the name of Stern De Mexico, S. de R. L. Address, S. Juan de Letran 21-914, Mexico, D. F.

Thomas H. Voshell, Architect, has opened an office at 88 Broad St., Charleston, S. C.

Stanley M. Ward, Architect, has opened offices at 19 N. Fullerton Ave., Montclair, N. J.

New Addresses

The following new addresses have been announced:

Abraham Bluestone and Enoch Bluestone (Bluestone & Bluestone, Structural Engineers), 150 Nassau St., New York 7,

Ruth Gerth and George Kosmak, 1226 Sutter St., San Francisco 9, Calif.

The Iorio Construction Co., The Bergen Theatre Bldg., 779 Bergen Ave., Jersey City 6, N. J.

William Henry Rowe, Architect, 214 Front St., San Francisco 11, Calif.

H. B. SMITH BOILERS PERFORM EFFICIENTLY WITH ANY FUEL

Easily Convertible

IN this year of fuel shortages, what boilers are you recommending? Are you puzzled over whether to specify a special oil burning unit, or a hand-fired boiler?

If so, H. B. Smith is your best bet, for while Smith "Mills" boilers have been designed primarily for automatic firing, they can be easily converted and will operate efficiently when hand fired.

Why? Because Smith "Mills" exclusive vertical water tube design provides more of the all important prime heating surface than does any other boiler of equivalent size . . . a principle that insures high heat absorption, regardless of the fuel burned . . . and, incidentally, LOW fuel consumption.

Write for details.

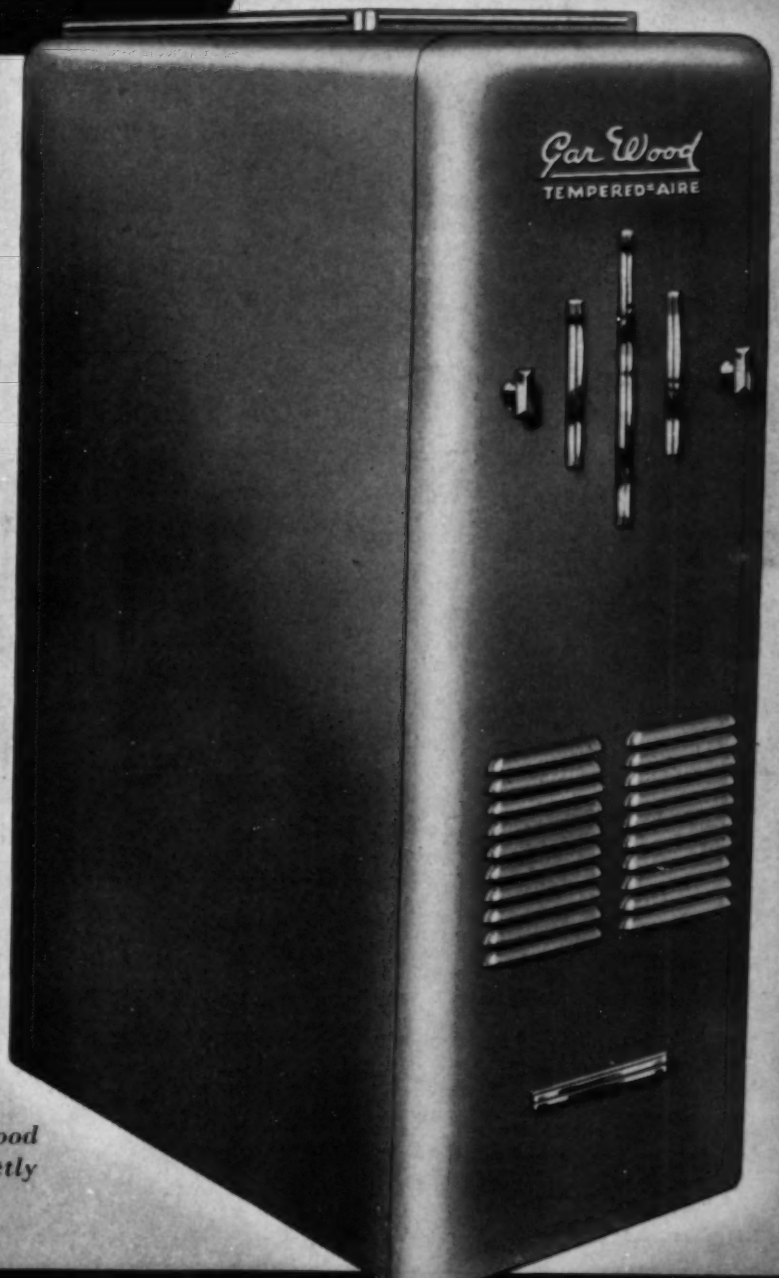
The H. B. SMITH CO., Inc.
WESTFIELD • MASSACHUSETTS
Boston New York Philadelphia

SMITH
Since 1853
MOST FAMOUS NAME IN HEATING

THEY'RE NOT AVAILABLE NOW . . . BUT

The new Gar Wood Heating Units are destined to reach a new high in popularity. That's no wonder when you consider the thousands of owners who know from ACTUAL EXPERIENCE that Gar Wood stands for high efficiency and unusual economy of operation. Home owners *talk* about that kind of performance. And here's a word to the wise: the new oil-fired or gas-fired Tempered-Aire Units and the oil-fired Boiler-Burner Units, Conversion Burners and Water Heaters are better than ever before . . . in performance, eye-appeal and SALES APPEAL.

Gar Wood HOME HEATING UNITS



HERE'S WHY It Pays to Specify Tempered-Aire

- ★ Advanced Gar Wood Engineering
- ★ Tried and Proved for more than 10 Years . . . plus recent developments
- ★ Completely Automatic
- ★ The Original Oil-fired Furnace-Burner Unit on the Market
- ★ Beautifully Designed Die-Formed Cabinet
- ★ Now More Efficient than Ever
- ★ Proved Economy of Operation
- ★ More Compact . . . Smaller in Size

See your local Gar Wood Dealer or write us directly for further details

GAR WOOD INDUSTRIES, INC., HEATING DIVISION

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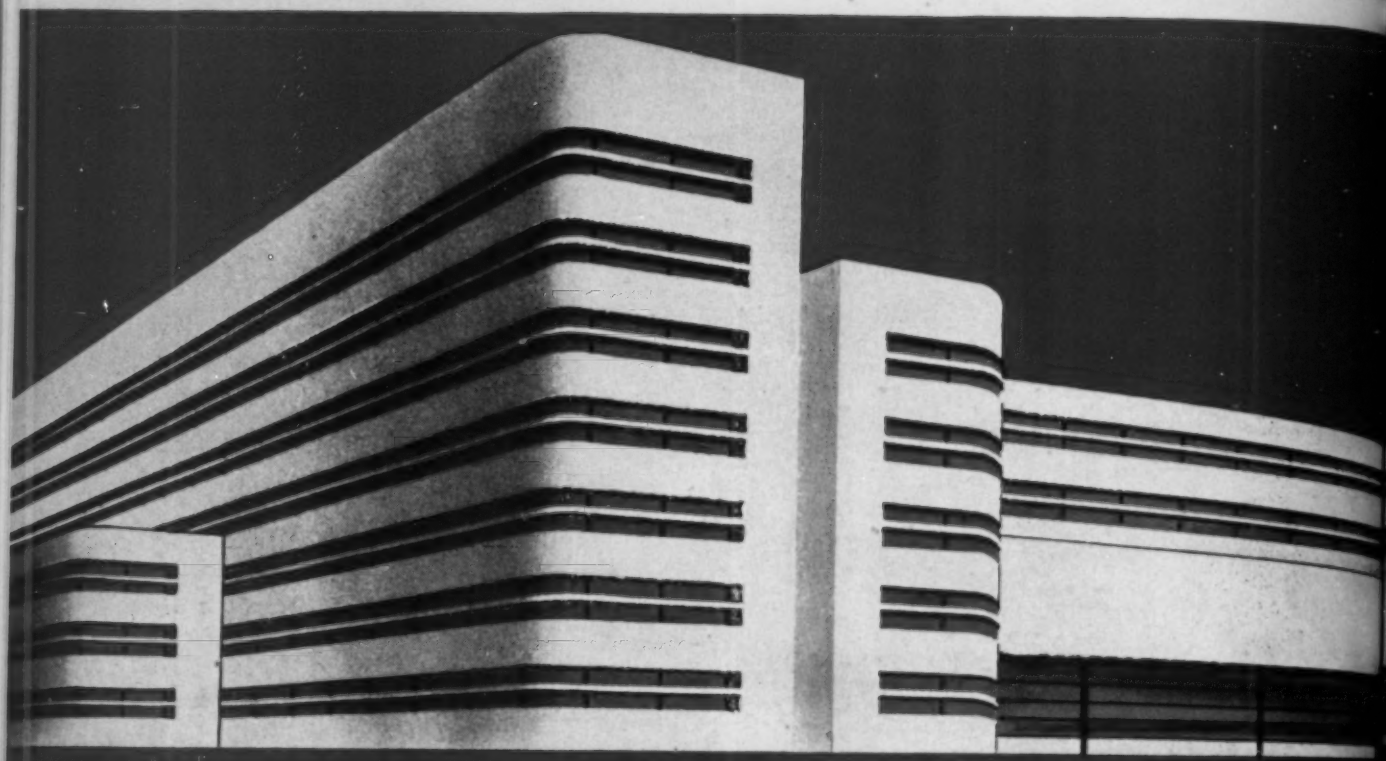
Canadian Distributors: Engineering Industries, Ltd., 282 Dupont St., Toronto, Ont.

HOISTS and BODIES . . . WINCHES and CRANES . . . TANKS . . . ROAD MACHINERY . . . MOTOR BOATS

INDUSTRIAL



Concrete multiple structures. One of many similar units erected in the Philadelphia area.

MULTIPLE UNITS • ENTIRE COMMUNITIES

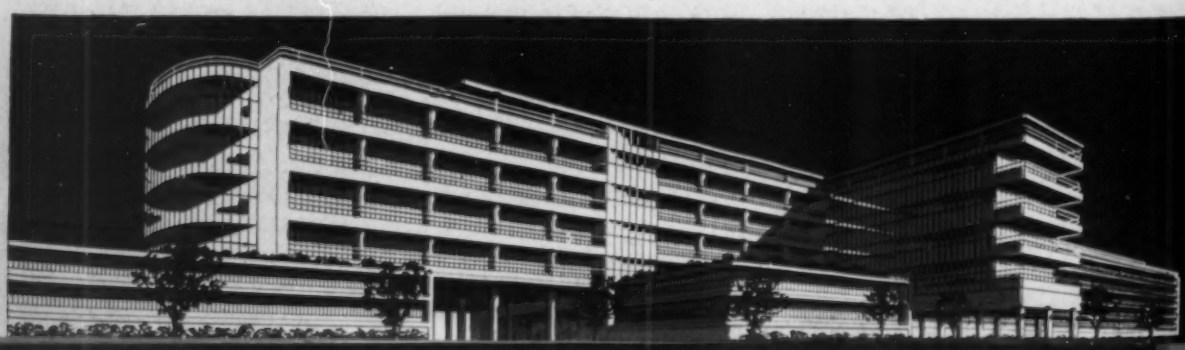
With $200,000,000 in government construction contracts completed in slightly over three years, we are equipped for, and experienced in the erection of huge structures, multiple building groups, and entire communities including water-works, sewage systems and the related utilities and facilities.

INDUSTRIAL PLANTS AND CONVERSIONS

Large-scale industrial plants, extensions and conversions can be given the same precision cost and efficient construction services that saved the government months of time and millions of dollars* on critically needed, high-speed war construction projects.

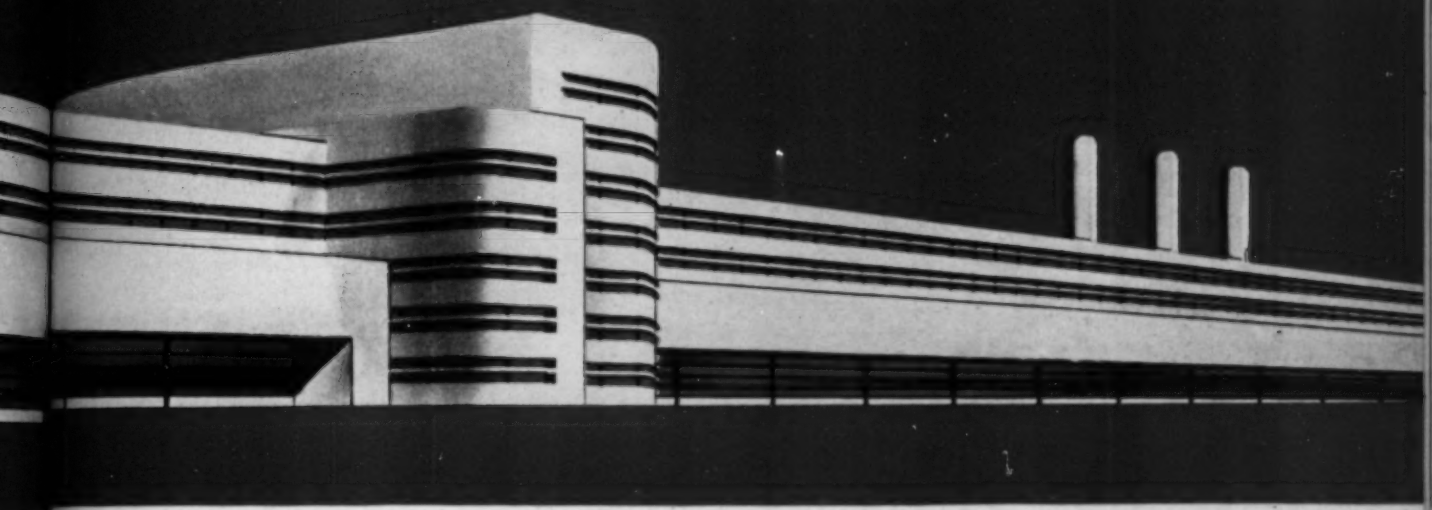
*(The Government's comparative Cost Records have established our consistent and substantial savings.)

A Metropolitan Health Center—Over $20,000,000 worth of hospital construction built in the last 3 years.



CONSTRUCTION

Based upon the same large-scale high-speed operations that completed in slightly over 3 years nearly 200 Government Projects totaling over $200,000,000



$100,000,000 WORK COMPLETED IN ONE YEAR

Working under extreme pressure, and invariably meeting or anticipating completion schedules, has perfected a technique that only a half-century of experience and the handling of $100,000,000 in construction work in 12 months could develop.

Factors in SPEED and ECONOMY are control of necessary materials—our own lumber and material yards, prefabrication subsidiary, heavy equipment & trucking organization and fast-moving personnel.

ADAPTABILITY TO LARGE OR SMALL PROJECTS

With organization and facilities for operatng a dozen large projects simultaneously, the Johnson corporations and subsidiaries are also organized to handle $100,000 projects of the type Industry may now require. To such problems we give the direction and supervision that an economically operated project of this size demands.

We should be pleased to confer or submit proposals on projects from $100,000 to $50,000,000.

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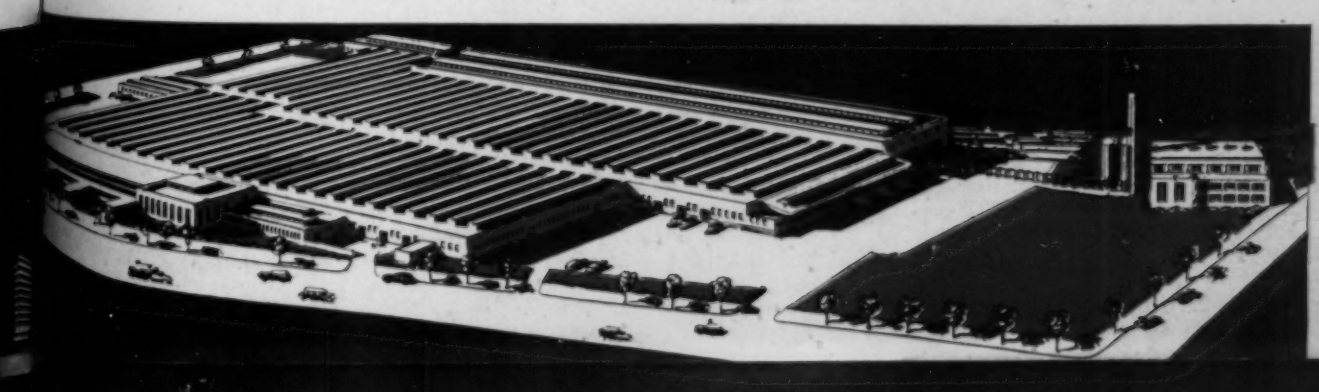
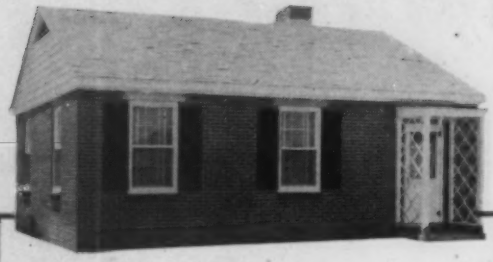


ANDERSON VILLAGE, Columbus, Georgia
Bibb Manufacturing Co., Owners

ELLAMAE ELLIS LEAGUE
Architect

ALVIN L. LINDSTROM
Consulting Mechanical Engineer

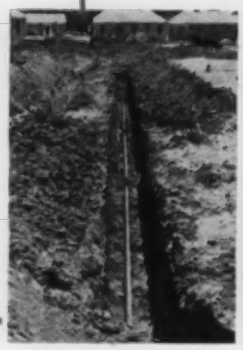


A typical home.

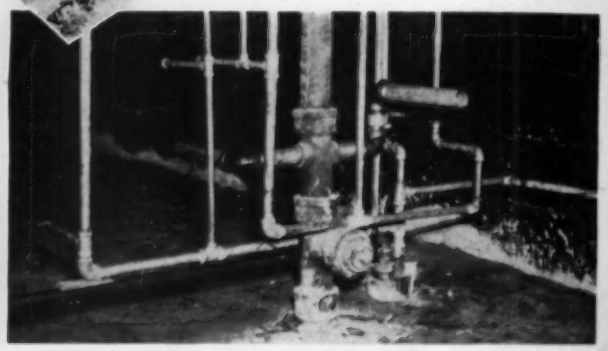
In this privately built housing project

WATER and GAS SERVICES ARE

100% BYERS WROUGHT IRON



Underground piping is Byers Wrought Iron.



Roughing-in piping for gas and water lines in one of the houses. All of these services are Byers Wrought Iron.

In everyone's mind, there are two items on the housing agenda marked for early and careful attention: large scale construction of low-cost *good quality* residences, and the creation of *good quality* living quarters for workers in decentralized industrial plants.

There is already plenty of evidence that these jobs can be done, and that professional assistance can make a highly important contribution. Anderson Village provides a current example.

The project includes 160 houses, placed in a landscaped area as pleasing and attractive as a middle-class suburb. Economical construction was obtained by controlling house size, rather than by compromising quality. The walls, for instance, are brick veneer on hollow tile, and interior partitions are masonry. Kitchens are equipped with refrigerator, range, water heater, and combination sink and laundry tubs. The insistence on quality and permanence is strongly reflected in the piping. All gas and water lines, underground and within the buildings, are Byers Wrought, Iron.

This application of Byers Wrought Iron carries on a practice that designers have profitably followed for years, in all types of structures. The soundness of the choice is verified by experience; in many areas, wrought iron pipe is still on the job after 30, 40 and even 50 years, where ordinary materials have failed in a fraction of the time.

The reason for wrought iron's unusual service is found in its unusual structure and composition, which are duplicated by no other material. Tiny fibers of glass-like silicate slag are threaded through a body of high-purity iron. These fibers halt and diffuse corrosive attack, discouraging pitting. They also help to anchor the initial protective film, which shields the underlying metal.

Byers Wrought Iron is available now, in any quantity, for any project. You'll find some helpful information on its performance in our bulletin, "Byers Wrought Iron for Piping Services." May we send you a copy?

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco.

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for lasting appreciation

In design and decoration, in functional capacities—plastics have earned a place in modern architecture. Their uses—many subject to development—offer new flexibility to the designer of future buildings.

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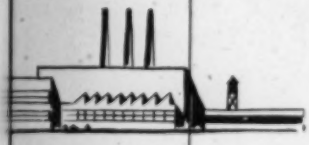
SARAN

Present and Potential Uses: Non-rusting screen; plumbing parts and equipment; insulation; name plates; wire coating; pipe and tubing for installations requiring chemical and corrosion resistance; paint brush handles; monofilament for textiles; plating masks; valve and valve parts; chemical apparatus; pump parts; meter parts; bottles; closures.

Properties: Resistant to chemicals, abrasion, corrosion, water, and moisture; good electrical insulator; excellent thermal insulator; non-flammable; tough; flexible; dimensionally stable; not recommended for installations requiring temperature resistance above 170° Fahrenheit; tends to brittleness at extremely low temperatures.



STYRON

Present and Potential Uses: Lighting fixtures; escutcheons; decorative objects and trim; insulators; battery cases; food handling equipment; refrigerator parts; chemical apparatus; pharmaceutical, cosmetic and jewelry containers; lenses, dishes, pens, pencils; hydrometers; funnels; closures; costume jewelry; novelties of many kinds.

Properties: Crystal, translucent or opaque; broad color range; excellent high frequency electrical insulator; can "pipe" light through rod at angles, and around bends; resistant to most acids and alkalies; low water absorption; light weight; good stability at low temperatures; limited solvent resistance; available only in rigid forms.

ETHOCEL

Present and Potential Uses: Modern window blinds; special extruded shapes for kitchen trim; rods, tubes and bars; radio cabinets; housings; tool handles; escutcheons; insulators; automotive and aircraft window frames; aircraft parts; tape and wire coating; automotive parts; containers; flashlights; refrigerator parts.

Properties: Extra tough, even at low temperatures; attractive colors; pleasant to handle; transparent or translucent; dimensionally stable to varying climatic conditions and temperatures; light in weight; available in wide range of flow; not available in crystal color; limited chemical and solvent resistance.

STYRALOY 22

Present and Potential Uses: Scuff plates; floor mats; handles for tools of many kinds, as well as household appliances; communication cables, gaskets; bushings; coil forms; and many other applications still to be ascertained. Ideally suited to extrusion of complex cross sections and readily fabricated by other molding techniques.

Properties: High dielectric strength, low power loss over all frequencies. Power factor only .005 at 100-300 megacycles. Flexible and shock resistant from −90° F. to 212° F. Specific gravity less than 1. Water absorption only .2 to .5%. Resists heat, ozone, and most chemicals. Resists permanent indentation and abrasion. Easily machined.

We work it out together

DOW

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SARAN • SARAN FILM

Survey after Survey shows the SWING is to *Electric Ranges*

Wire Your Homes For Electric Ranges—
That's What Women Want!

THERE'S no doubt about it; women *prefer* the convenience, cleanliness, dependability and economy of *modern* electric cooking. And *you* can cash in on this preference by wiring your homes for Electric Ranges. Here's proof of the overwhelming trend toward electric cooking:

● WOMAN'S HOME COMPANION survey shows that *more* women plan to buy an Electric Range than *any other type!*

● McCALL'S MAGAZINE readers made the Electric Range their 2-to-1 "must have" choice in a recent contest.

● HOUSEHOLD MAGAZINE survey indicates that 3 times as many women want Electric Ranges as now have them.

● SUCCESSFUL FARMING survey shows that nearly twice as many REA consumers will buy an Electric Range *in first two postwar years* as now have one.

● COUNTRY GENTLEMAN survey shows that among the upper two-thirds of white farmers, the Electric Range is the 2-to-1 choice!

And prewar sales figures further emphasize the trend; between 1933 and 1941, sales of Electric Ranges increased over 900%!

Cash in on this growing demand. Wire your postwar homes for Electric Ranges. Built-in, the cost of such wiring is negligible—the selling power tremendous.

Electric Range Section
National Electrical Manufacturers Association

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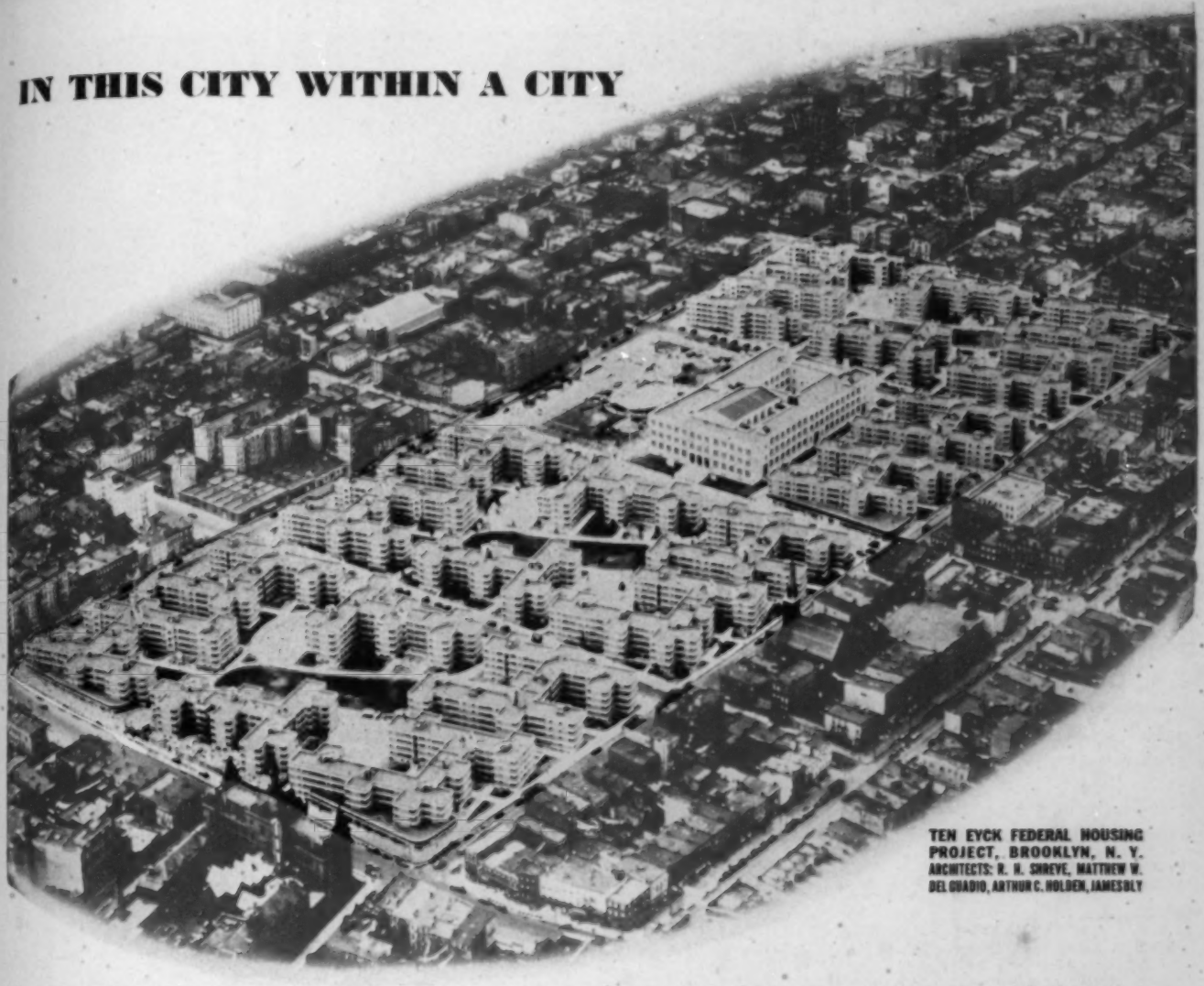
FOR EASIER SALES

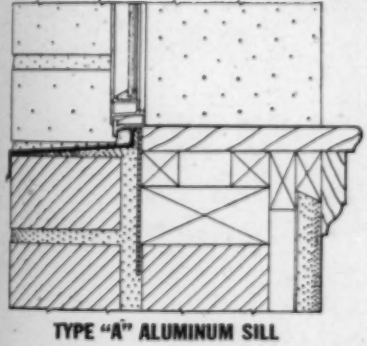
wire your houses

FOR ELECTRIC RANGES

IN THIS CITY WITHIN A CITY



TEN EYCK FEDERAL HOUSING PROJECT, BROOKLYN, N. Y.
ARCHITECTS: R. H. SHREVE, MATTHEW W. DEL GUADIO, ARTHUR C. HOLDEN, JAMES DLY



TYPE "A" ALUMINUM SILL
One of many standard Alcoa sills

Section Number	A	B	C	D	E	F	Wt. Per Foot
18063	3 1/2	3	1/8	1 3/16	3/16	3/16	.692
18064	4	3 1/2	1/8	1 19/32	7/32	3/16	.768
16754	4 1/2	4	1/8	1 5/8	1/4	3/16	.844
18971	5	4 1/2	1/8	1 21/32	9/32	3/16	.919
18065	5 1/2	5	1/8	1 11/16	5/16	3/16	.992
18972	6	5 1/2	1/8	1 23/32	11/32	3/16	1.067

every window has an Alcoa Aluminum Sill

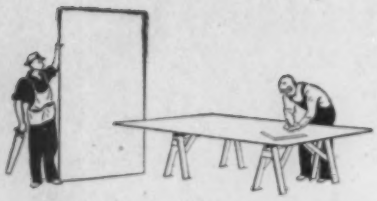
Easy to install, neat in appearance, low on upkeep—good reasons for using Alcoa Aluminum window sill on this and many other projects before the war. Convincing arguments for continuing their use as they again become available.

Their light weight makes handling easy. One man can set Alcoa sills. Sections are thin, permitting sills to be extended into the masonry, making tight joints. Aluminum needs no protective painting to safeguard it against the weather.

As aluminum is released for civilian uses, sills will again be stocked in convenient warehouses around the country. Plan on including Alcoa Aluminum sills in the residences and buildings you are now planning. Send for your copy of the booklet "Sills and Copings of Alcoa Aluminum". ALUMINUM COMPANY OF AMERICA, 2167 Gulf Building, Pittsburgh 19, Pennsylvania.

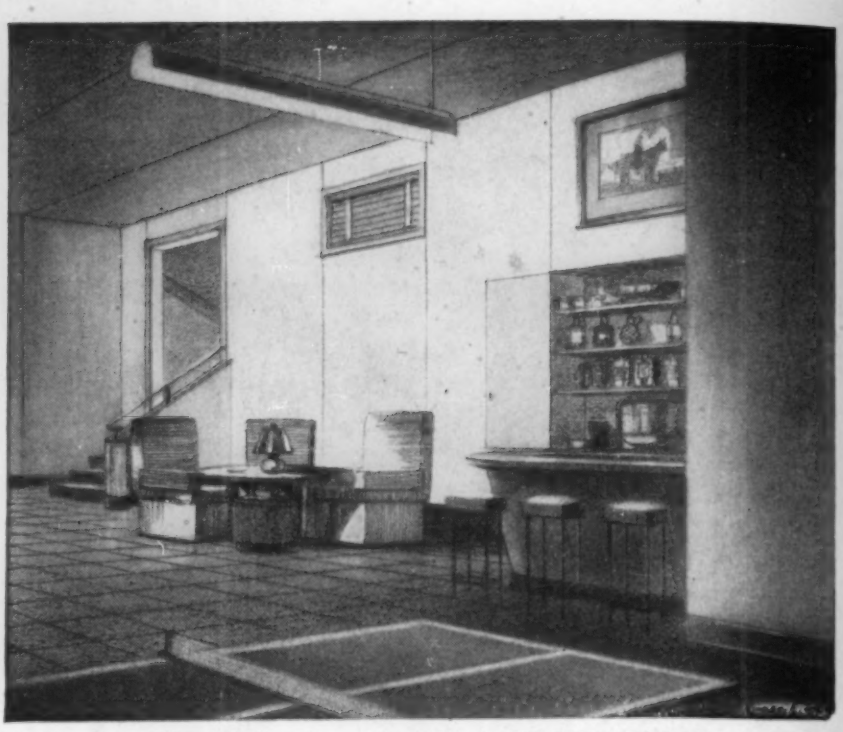
ALCOA FIRST IN **ALUMINUM**

ALCOA ALUMINUM



There are three grades of Douglas fir plywood panels made especially for various phases of wall construction. PLYWALL is made especially for standard wallboard use; PLYPANEL is a premium panel used for quality interior work; PLYSCORD is a utility panel made for wall and roof sheathing.

Walls of Douglas Fir Plywood... easy to plan, easy to apply!



Follow these Simple Suggestions in Planning Wall Designs with Large, Durable Plywood Panels!

There is no special or complex planning necessary in designing a wall treatment with Douglas fir plywood. Just follow a few basic suggestions—and the variation of finished design is almost endless.

One of many possibilities is illustrated here. In this case, the panels of Douglas fir plywood have been placed so that the vertical joints lend a pleasing design and at the same time give the basement playroom an illusion of extra height. As in all cases, the architect started with the openings and divided the plain wall spaces in an orderly pattern for the most pleasing effect. This particular basic design treatment is diagramed at the right.

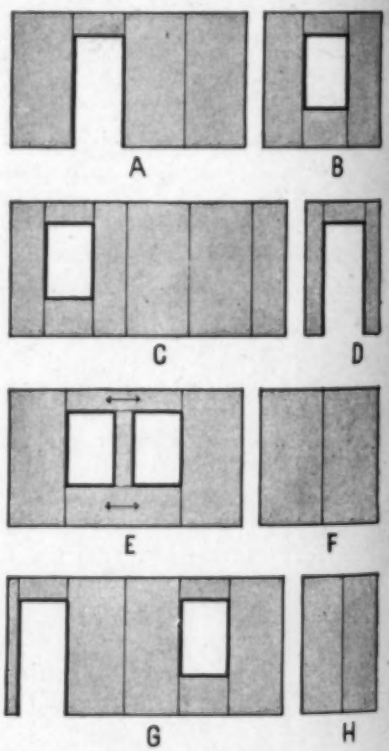
Douglas fir plywood is an ideal material for walls — strong, rigid, kick-proof and puncture-proof. No matter what design treatment is used, the large, light-weight panels go up quickly and easily. They can be worked by hand or with power tools and they hold nails or screws right at the edge without danger of splitting.

Remember — the variety of wall design treatments is limited only by the architectural plan and the ingenuity of the designer. For more detailed information about plywood for wall construction, write the Douglas Fir Plywood Association.

DOUGLAS FIR PLYWOOD
LARGE. LIGHT. STRONG.
Real Wood PANELS

No. 6 of a Series

Vertical Treatment of Panels For an Attractive Wall Design



CAN PLYWOOD BE SPECIFIED NOW FOR POSTWAR USES?

The increased capacity of the industry will make MORE Douglas fir plywood available for civilian consumption THAN EVER BEFORE, as soon as the needs of the armed services lessen or war restrictions are lifted. There will be no reconversion delays; the same types and grades of Douglas fir plywood that are now being made can flow immediately into peace-time building and construction.

DOUGLAS FIR PLYWOOD ASSOCIATION

Tacoma 2, Washington

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Look beneath the surface for the mark of the progressive builder

That framework of Stran-Steel, with its nailable studs and joists, sets any house apart from others of comparable design. For it imparts an inner value . . . permanence, fire-safety, freedom from warp, sag and rot . . . that safeguards the housing investment and enhances the builder's reputation.

Progressive architects and contractors are thinking in terms of Stran-Steel . . . shaping their building plans around this uniform precision material. Its ease of use and speed of erection have been demonstrated in tens of thousands of "Quonsets" and other military buildings framed with Stran-Steel during the war. Improved and simplified for postwar use, Stran-Steel is ready to take its place as the framing material of a new era in building.

YOU NAIL TO STRAN STEEL

GREAT LAKES STEEL CORPORATION

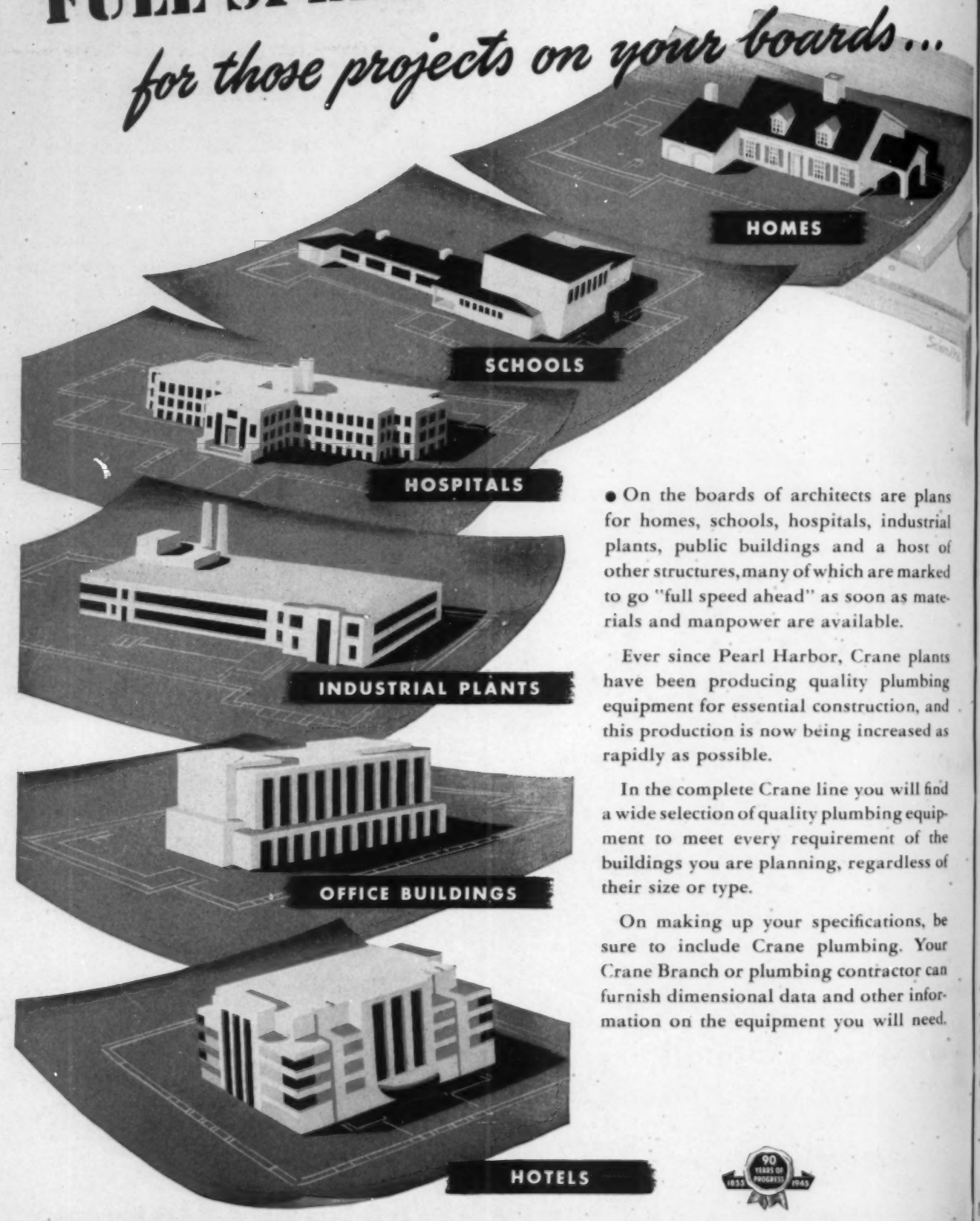
Manufacturer of the Famous Quonset Hut for the U. S. Navy

STRAN-STEEL DIVISION • 37th FLOOR PENOBSCOT BUILDING • DETROIT 26, MICHIGAN

UNIT OF NATIONAL STEEL CORPORATION

FULL SPEED AHEAD ...

for those projects on your boards...



● On the boards of architects are plans for homes, schools, hospitals, industrial plants, public buildings and a host of other structures, many of which are marked to go "full speed ahead" as soon as materials and manpower are available.

Ever since Pearl Harbor, Crane plants have been producing quality plumbing equipment for essential construction, and this production is now being increased as rapidly as possible.

In the complete Crane line you will find a wide selection of quality plumbing equipment to meet every requirement of the buildings you are planning, regardless of their size or type.

On making up your specifications, be sure to include Crane plumbing. Your Crane Branch or plumbing contractor can furnish dimensional data and other information on the equipment you will need.

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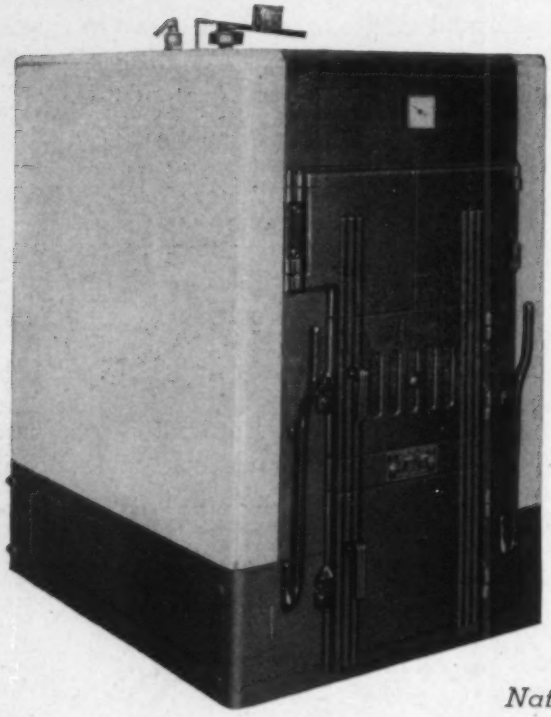
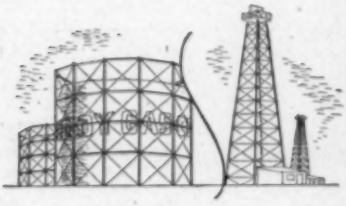
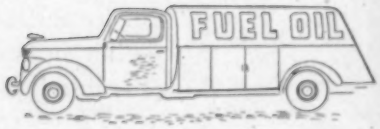






No. 3 of a series,
National Heat Extractors

National Heat Extractor boilers are *engineered* to operate at high performance levels when fired with coal, gas or fuel oil. Important, too, is the fact that they can be converted—after installation—from hand to mechanical firing without reduction in rating.

The No. 3 series National Extractor illustrated is especially designed for larger homes and commercial installations. Remember—there's an NRC heating product to fit every building need!

Write for your copy of our new booklet, "Plan to Be Comfortable." There's no obligation, of course.

The NATIONAL RADIATOR Company

JOHNSTOWN, PENNSYLVANIA

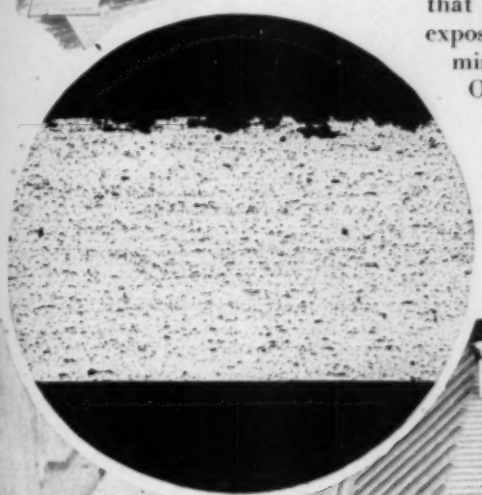
The Microscope confirms—

"Alcoa Aluminum roof in excellent condition after fourteen years in industrial Pittsburgh"

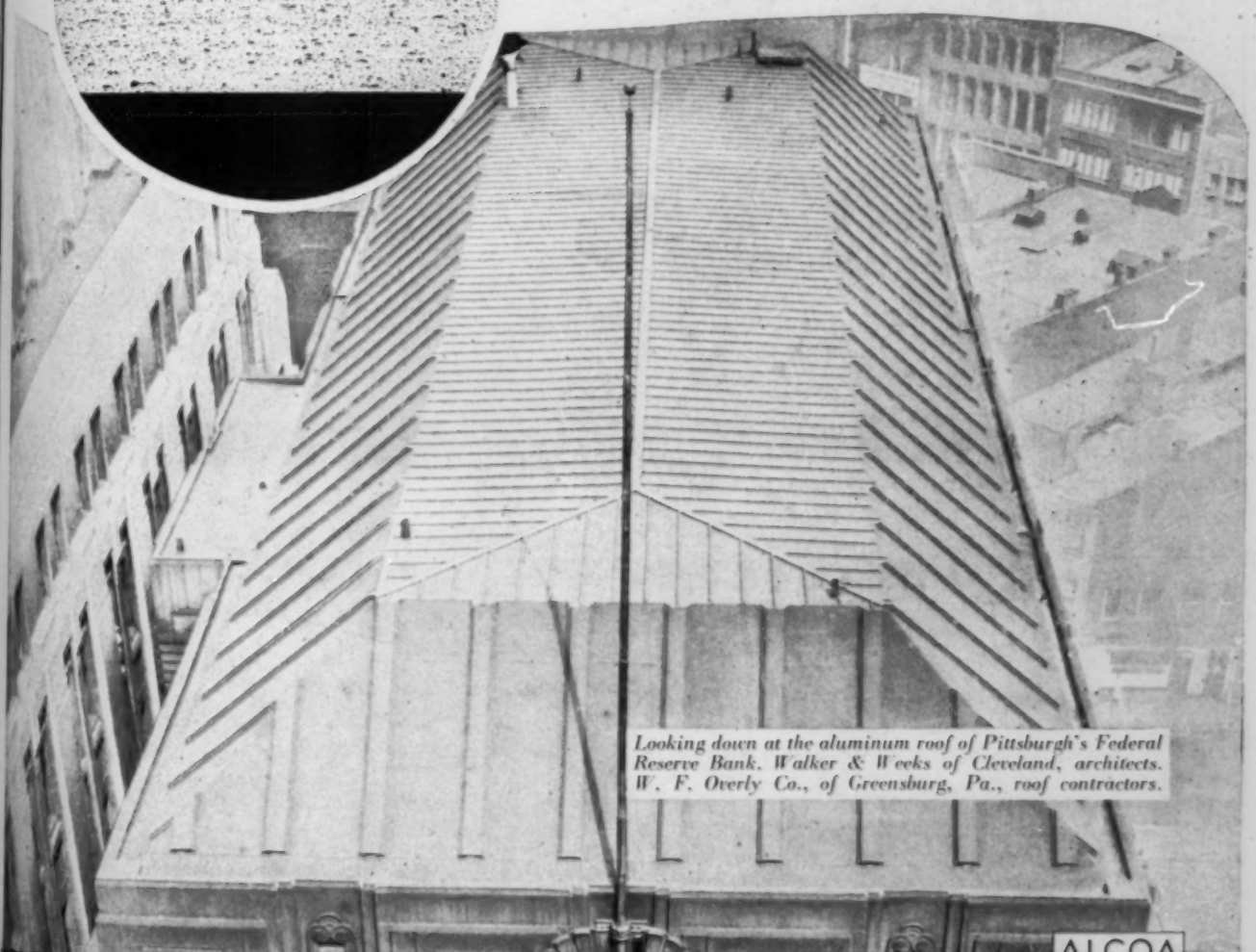
Visual inspections of this aluminum roof have been telling us right along, "Behaving fine". These observations were confirmed recently, following a fire under the roof, when portions of the sheet removed were given to Alcoa for microscopic examination and testing.

Strength of the samples is normal for this Alcoa Alloy, showing that its physical properties have not been impaired by 14 years' exposure. Corrosion, arch enemy of most metal roofs, has had only minor effect on the aluminum.

On the basis of these findings, Aluminum Research Laboratories make this prediction: There are many times 14 years' life left in that aluminum roof. ALUMINUM COMPANY OF AMERICA, 2167 Gulf Building, Pittsburgh 19, Pennsylvania.



Cross section of this aluminum sheet, magnified 43.5 times. The black hollows at the top show the very limited extent to which corrosion has penetrated after fourteen years.



Looking down at the aluminum roof of Pittsburgh's Federal Reserve Bank. Walker & Weeks of Cleveland, architects. W. F. Overly Co., of Greensburg, Pa., roof contractors.

ALCOA FIRST IN **ALUMINUM**

ALCOA ALUMINUM

Cold water pouring into a heated copper gutter during test in the Revere Laboratory

WE USED HEAT TO GET "Light"

This photograph, of an experimental copper gutter being tested in the Revere Laboratory, was taken by light that was mostly heat. For the kind of light Revere was seeking in this research was information, knowledge, understanding—that we could pass on to you.

To get it, we had to bring the sun indoors, or at least its summer heat. Also sudden rainstorms, to create a temperature range of 160°. And put under them a typical sheet copper gutter such as any skilled worker might install on a building. Then we could *see* what happens when cold rain hits sun-baked copper, could measure any movement in the metal—could, in short, find out why sheet copper construction sometimes fails, even when materials, design and workmanship all appear virtually perfect.

From these and other Revere tests came the application to sheet metal construction of the basic but simple principle of columnar strength—from which we have worked out new data and methods that reduce this type of construction to a matter of engineering design.

All these facts are fully covered in the new Revere booklet, "Copper and Common Sense." To be sure of receiving a free copy, write today to the Revere Executive Offices. Revere materials are handled by Revere Distributors everywhere. For help in difficult problems, call on the Revere Technical Advisory Service, Architectural.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Ave., New York 17, N.Y.

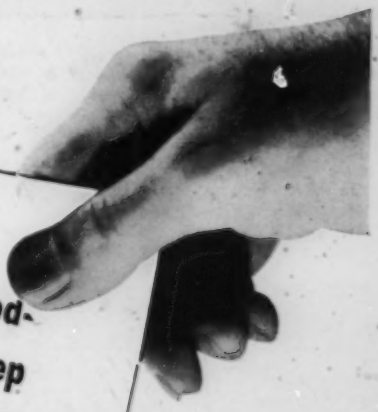
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N.Y.—Sales Offices in principal cities.

Listen to Exploring the Unknown *on the Mutual Network every Sunday Evening, 9 to 9:30 p. m., EST.*

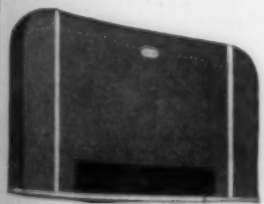
We said this one year ago

We believe that in the early days of reconstruction, school boards will find it easier — because of expected shortages — to undertake and complete the modernizing of old schools before the construction of new ones. For new schools OR old, the Nesbitt Syncretizer Unit Ventilator is ready NOW.

We say this today

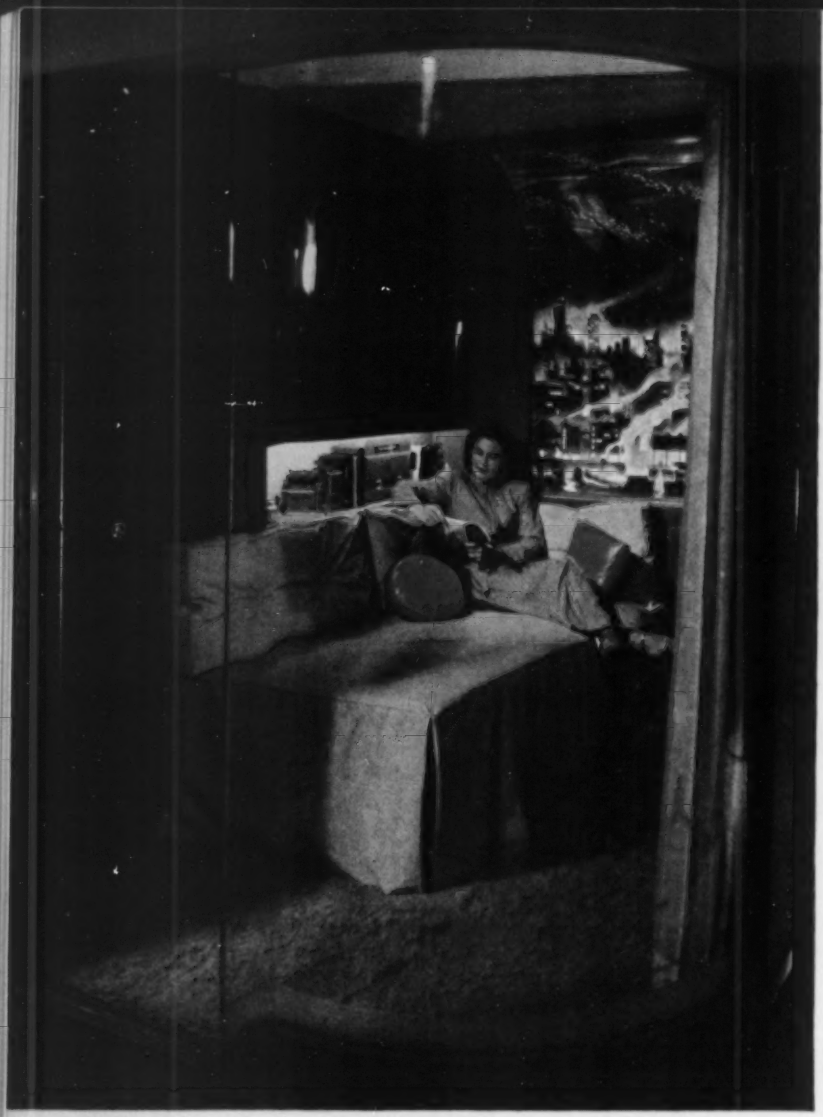


"Expected shortages" are now a reality. Modernizing old schools is still the best first step in your postwar plans because of the scarcity of labor and materials. The Nesbitt Syncretizer Unit Ventilator is ready NOW. Call in your architect or engineer today.



Nesbitt SYNCRETIZER *Unit Ventilator*

Made and Sold by John J. Nesbitt, Inc., Holmesburg, Philadelphia 36, Pa. — Sold also by American Blower Corp.



The "Dream Suite," conceived by Rohm & Haas to show home uses for PLEXIGLAS, recently attracted over 50,000 visitors at John Wanamaker's Philadelphia store. PLEXIGLAS-enclosed bedroom (above), built small for low-cost air-conditioning, looks spacious . . . has PLEXIGLAS mural "painted" in light.

In the bathroom, the medicine cabinet, lined with PLEXIGLAS shelves, has red PLEXIGLAS flap at top, marked "poison." Washbasin and towel bar are PLEXIGLAS, too, as is the illuminated wall clock. Clear PLEXIGLAS handles on faucets are indelibly marked hot and cold with dots of color.

now . . .

BUILT-IN BEAUTY WITH *Plexiglas*

Permanent crystal clarity, high impact strength, "light-piping" properties make Plexiglas the outstanding plastic for home architecture . . .

Famed for service in transparent sections on fighting aircraft, PLEXIGLAS at last is fully available for peacetime purposes. Now its unique combination of properties can be employed by architects to execute new concepts of beauty in home construction.

WITH PLEXIGLAS, CRYSTAL-CLEAR WALLS and enclosures shaped in graceful, sweeping curves are entirely practicable. The plastic can be formed at relatively low temperatures . . . cut, drilled or machined as easily as wood. Although less than half the weight of glass, transparent PLEXIGLAS withstands seven impact without breaking.

WITH PLEXIGLAS, LUMINOUS MURALS and radiant walls, producing original and dramatic effects, are readily fashioned. These applications are made possible by "light-piping," a phenomenon which occurs when a sheet of PLEXIGLAS is lighted at one edge. The light is transmitted to the other edge, escaping *only* at engraved, painted or sanded surfaces. Three-dimensional effects are

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Engraved, edge-lighted PLEXIGLAS shower stall has four spray bands, separately controlled by PLEXIGLAS knobs, duplicated inside shower. Scales set in floor register weight on eye-level PLEXIGLAS panel. Screen of PLEXIGLAS prisms (right) provides privacy for toilet compartment, yet admits ample light.

ained by edge-lighting several sheets of
EXIGLAS, each carrying a different design.

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stice to your new ideas. Let's talk them
r . . . perhaps we can be of help to you.

The "Dream Suite" boudoir features radiant walls of PLEXIGLAS attractively etched and "painted" in light, and a luxurious, upholstered PLEXIGLAS bench. PLEXIGLAS trays and shelves in swing-out door of dressing table, and snag-proof PLEXIGLAS drawer linings have rounded corners for easy cleaning.

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Lumite offers qualities never before found in *any* window screen. Here are ten hard-boiled, logical reasons why YOU cannot pass up this "hot" item:

1 RUSTPROOF Lumite cannot rust under *any* condition: salt air, acid fumes, smoke, rain, snow, fog, extreme heat or extreme cold. In other words, Lumite cannot wear out through natural causes!

2 WON'T BULGE Because it is highly resilient under pressure or impact, Lumite "gives" without breaking a strand! It *instantly* snaps back to its original shape . . . without a trace of bulge, dent or sag!

3 CAN'T STAIN When Lumite is used, ugly streaking of window sills or sidewalls is impossible . . . eliminating forever the need to repaint "eyesore" stains or streaks around windows.

4 NO PAINTING Lumite is not painted, in the first place. Furthermore, it never will need painting at *any* time. That tiresome, messy "annual" repaint job is at last a thing of the inefficient past!

5 CLEANS EASILY Should Lumite ever become soiled by exposure to excessive soot or dirt, a few quick whisks of an ordinary damp cloth or moist brush will keep Lumite fresh and new-looking at all seasons . . . year after year.

6 EASY TO HANDLE Lumite weighs about one-third as much as metal! It is light to handle in rolls . . . simple to cut to desired length . . . and easy to frame, with no sharp points to stick hands or tear clothes.

7 HOW TO FRAME Nothing to it! For best results, just stretch tight and place tacks every 2 or 3 inches. In the case of cut edges, fold over about ½" before tacking.

8 NON-INFLAMMABLE Lumite is absolutely *flameproof*. Like most household equipment, it can be destroyed by fire . . . but Lumite itself *can not burn* under any circumstances!

9 TESTED COLOR A rich dark green is Lumite's standard color, determined by many scientific tests as not only attractive to look *at* and easy to look *through*, but inconspicuous as well. Lumite cannot run or fade.

10 OUTLASTS METAL Because Lumite is unaffected by natural causes, can't bag, bulge or warp, and can take unusual abuse without wearing out . . . properly-framed Lumite gives years more wear than the best types of wire screens. Yes . . . Lumite screens *can* be left up all year without damage.

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Send *today* for FREE SAMPLES of Lumite Plastic Screen. You will also receive description and full specifications, as outlined in our new folder A.I.A. 35P.

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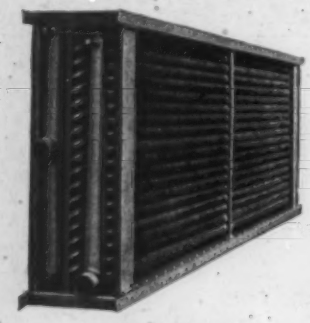

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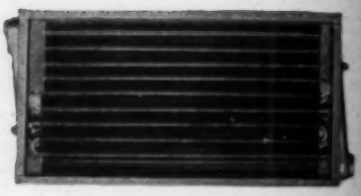

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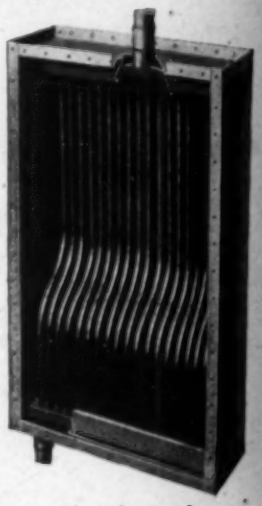

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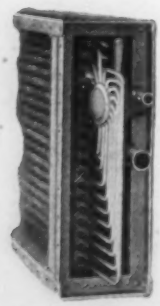

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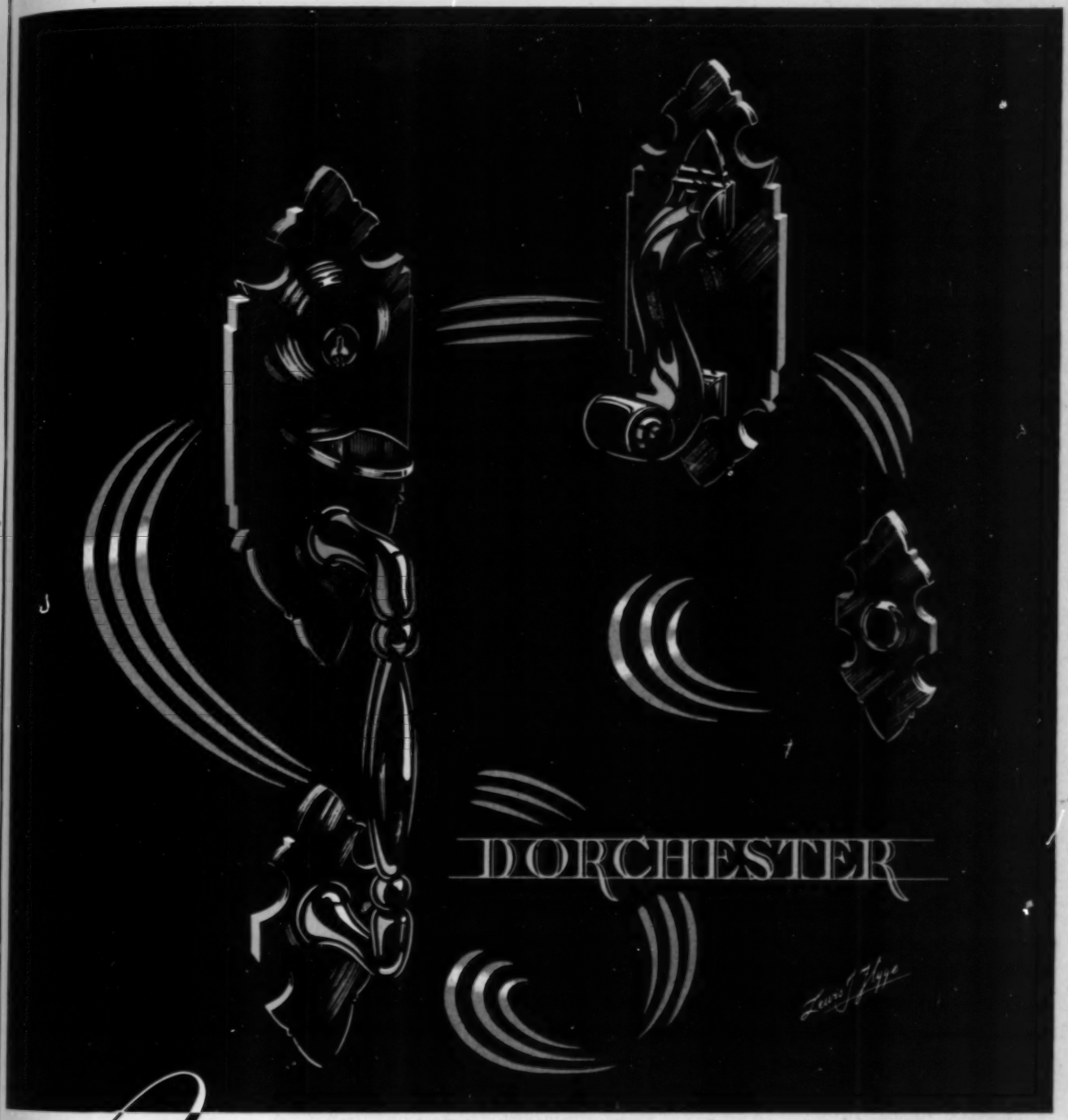

Pattern for better living

The soft, artistic lines of this Schlage Entrance Door Set extend a warm welcome to your friends, while the lock provides a sturdy defense against intruders. Dorchester Design is ideal for colonial homes. It is now available through Schlage hardware distributors in all parts of the United States.

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G-E Wiring Material News

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USE THIS NEW

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This new G-E Cartridge and Plug Fuse Catalog not only gives you complete information on G-E Fuses but also gives you much general fuse information. It includes chapters on how a fuse operates, on the development of fuses, on fuse tests and on the maintenance and care of fuses. G-E Fuses described include non-renewable cartridge fuses, renewable cartridge fuses, Silvend fuses with silver-plated contact surfaces and Pyrex* plug fuses.

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G-E Q-Floor Wiring for Robertson Q-Floors

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On Underfloor Electrical Distribution For Factory and Commercial Buildings

Either of these underfloor distribution systems will give the buildings you design wonderful electrical flexibility. Outlets can be preset or added later wherever they are needed. Whole factory production setups or office arrangements can be moved at will with new electrical connections readily available.

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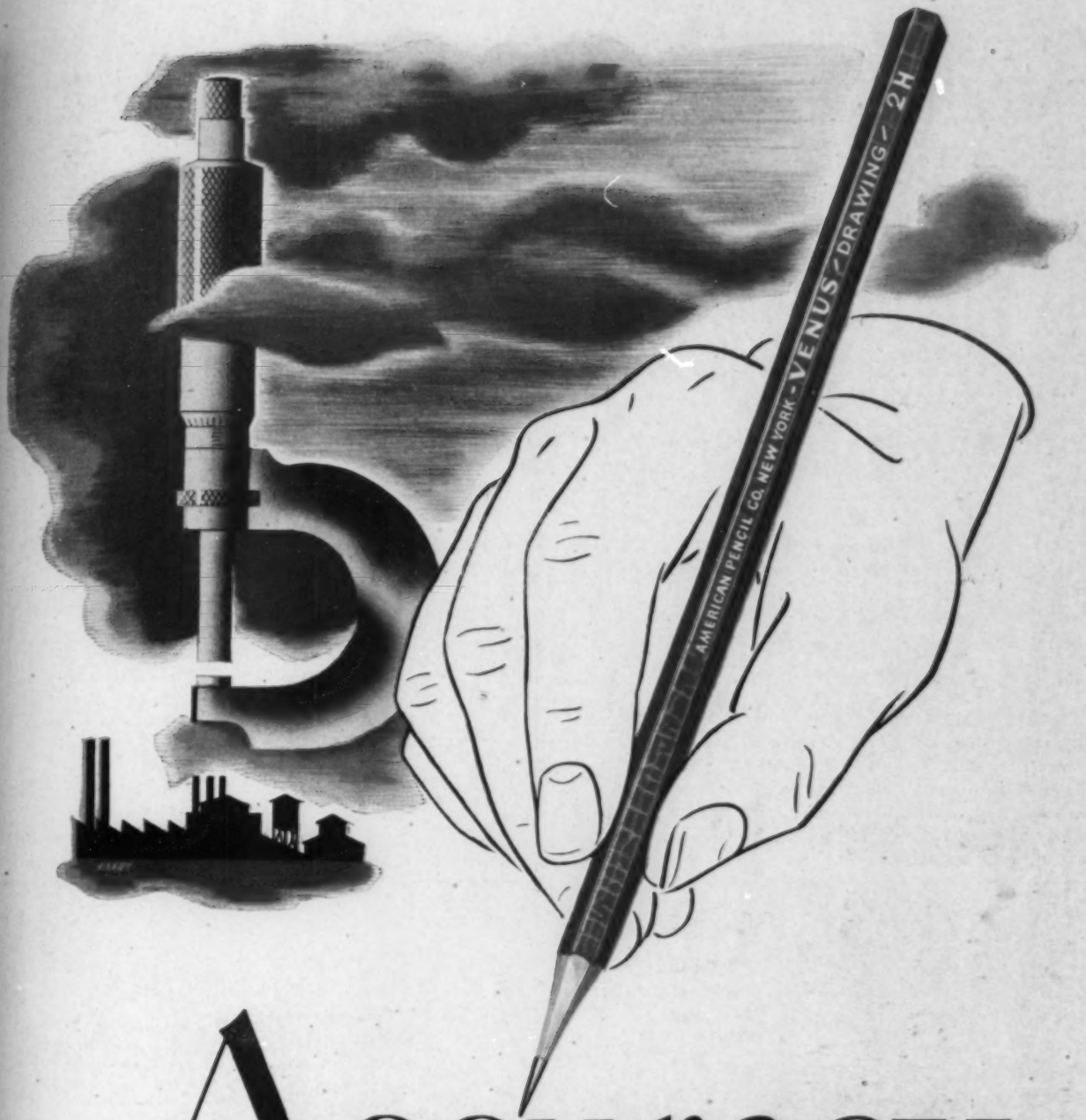

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Architectural Dutch Treat

. . . A FIFTY-FIFTY PACT BETWEEN A HOUSE AND ITS OWNER LEFT A HAPPY HERITAGE FOR HOME LOVERS

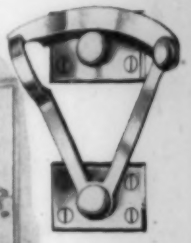
■ This is an authentic version of the durable Dutch Colonial. Beloved by Americans for its friendly hominess, it fits the landscape like a sturdy oak, never inflicting a sense of stark newness. Its originator, the Dutch immigrant, perhaps made a pact with his house . . . a promise to build it honestly of stout timbers and native stone . . . receiving in return abiding security and cheer.

■ This is an ornamental doorway evolved from the earlier plain design to eliminate, by means of side and fan lights, the gloom of the central hall. Of course, the graceful design also expressed the owner's desire to make the entrance as inviting as possible. See how Russwin craftsmanship follows the authentic style in gleaming cast brass.

Russwin Plymouth Design Entrance Door Hardware No. 13013

■ This is snug, restful comfort . . . beamed ceiling . . . warm tones of mellowed woods in hand-planed paneling . . . small-paned windows. The Dutch farmer contrived his house as honestly as he would a chair – to suit his personal comfort – for he was not the sort to pick up and move. If, like him, you would have enduring service from each detail of your home, look well to the hardware you choose. Allot a full 2% of the building cost to finish hardware – and Russwinize throughout with cast brass and bronze.

Russwin Interior Door Set No. 496-75



Russwin Plymouth Design Dutch Door Quadrant No. 650

■ This is the kitchen "workroom" – ample in space in the early days – more compact now by reason of modern appliances. The quaint charm of certain features has been retained, such as the Dutch door with its unique quadrant latch. Past masters in the authentic and serviceable, Russwin has the right hardware for your postwar house. Plan to choose from Russwin's illustrated booklet, *Residential Hardware.* Write for a copy. Russell & Erwin Manufacturing Company, New Britain, Connecticut.

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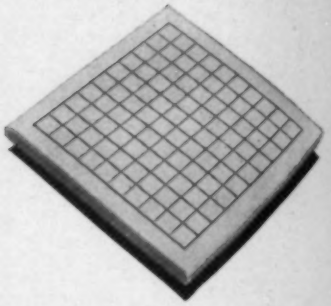

or

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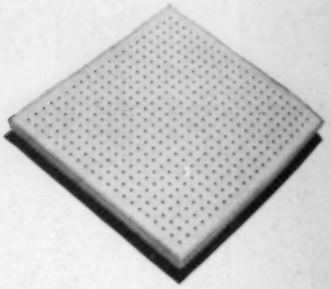

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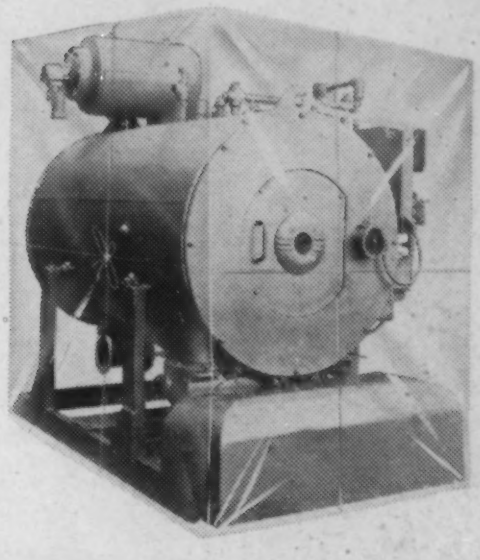

After every war, peace brings great opportunity to men who recognize that opportunity and take advantage of it. The fleeting moment when important decisions are made finds them ready with that one priceless element of all success—VISION.

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Snead Mobilwalls have for years been the accepted standard movable steel partition for office and factory buildings. Snead Wainscoting has revolutionized the construction of laboratories. Hundreds of the foremost libraries throughout the world are equipped with Snead Bookstacks, Study Carrels, Conveyors and Partitions.

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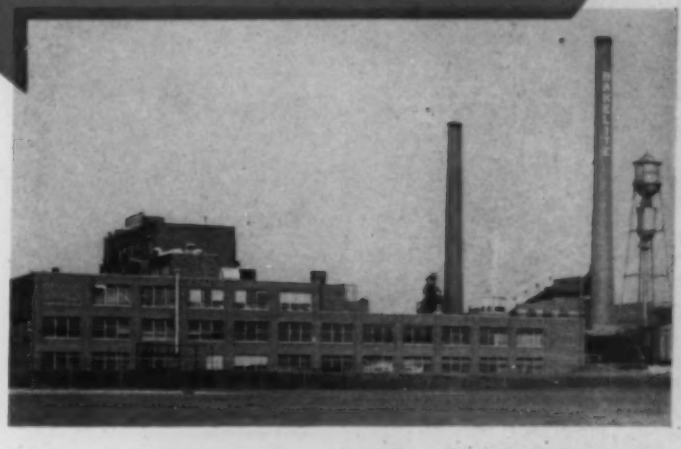
Write us about the type of project you are planning, and we will gladly send you specific illustrated material.

Since 1849, the Snead symbol of lasting beauty, quality and progress in metal construction



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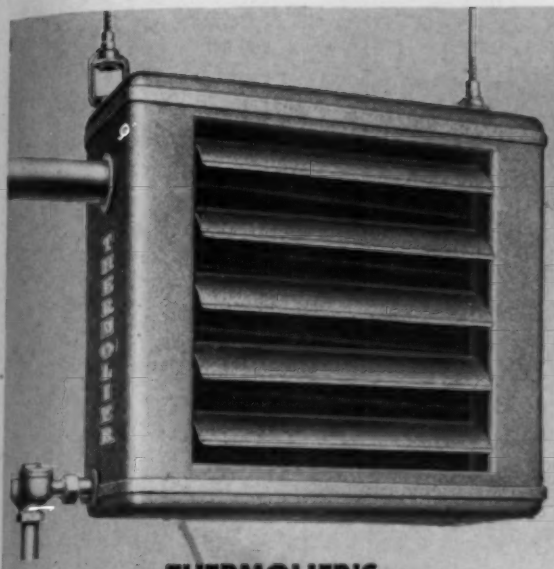
STEEL for the Nation's Bridges

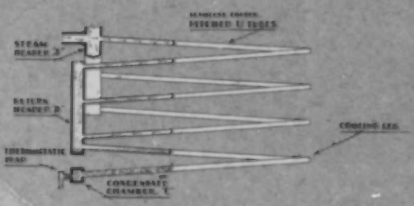
Bridges, arching against America's hills and plains and city skylines, bear striking testimony to the country's dynamic will to grow. The restless life of the nation teems and surges on its bridges, carrying vast tonnages of rail and motor traffic—a life and an economy more deeply wedded to ceaseless and fruitful movement than any other country in the world can boast.

In the rise of America's great bridges Bethlehem has had much part, as a leading producer of structural steels, during nearly half a century. Today Bethlehem stands ready to supply steel not only for major bridges, but also for the hundreds of smaller highway and railway bridges that will soon be rising.

Bethlehem
STRUCTURAL SHAPES

BETHLEHEM STEEL





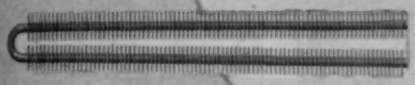
Thermolier's
INTERNAL COOLING LEG
(PATENTED)

Insures continuous drainage of condensate . . . maximum radiation from all surfaces at all times!

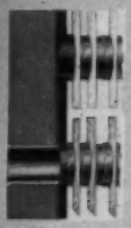
The exclusive Thermolier Internal Cooling Leg is No. 1 of the twelve reasons for the superiority of this unit heater. Besides insuring *all* the heater working *all* the time, it permits the use of a thermostatic trap, the simplest and least expensive of all traps. Drainage is continuous, eliminating damage by water hammer due to intermittent drainage cycles. *The Internal Cooling Leg built into Thermolier gives cooling effect of 100 feet of usual external cooling leg piping.*

A Grinnell Engineer will be glad to demonstrate this and other points of superiority of Thermoliers. He'll show you how Thermoliers will distribute heat uniformly to every square foot of your buildings and save up to 27% of still-scarce fuel. Ask for the new Grinnell Thermolier Catalog 6-E. It gives all the details of construction, application, capacities and installation. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch Offices in Principal Cities.

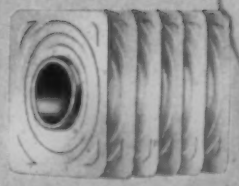
THERMOLIER'S SUPERIOR FEATURES



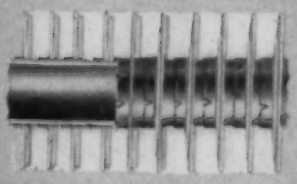
BUILT-IN EXPANSION PROVISIONS. The "U" type tubes allow expansion and contraction, ease damaging strains.



LEAKPROOF TUBE-TO-HEADER CONSTRUCTION. Joints made by the expanding method assure safety and durability.



SUPERIOR HEATING ELEMENT. Square copper fins on strong seamless copper tubing provide 24% more radiating surface.



TUBE DESIGN MINIMIZES DIRT COLLECTION. Finned U-tubes with no flat horizontal fin surfaces minimize dirt collection which decreases efficiency. 89% of heating surface is vertical fins, 11%, round horizontal tubes.

Other Points of Thermolier Superiority – built-in drainage • continuous rated capacity • heavy frame gives greater rigidity • motor and fan meet specific Thermolier requirements • simple piping connections • adjustable hangers facilitate erection • packed for easy installation.

GRINNELL

Thermolier Unit Heaters
FOR FULL VALUE FROM FUEL DOLLARS

RCA Sound Systems

for every purpose

RCA makes Sound Equipment for industry, office and all types of commercial buildings; for hotels, hospitals, schools and other institutions; for churches, theatres and stadiums—for installation wherever sound amplification or intercommunication is needed, either indoors or outdoors.

The expert engineering skill that develops RCA's outstanding radio, television and other electronic products contributes to the design and manufacture of RCA Sound Equipment. No matter what type of building or alteration you are planning, RCA has Sound Equipment to suit your requirements. If you need assistance with your project, an RCA Sound Specialist is at your service. Send for free booklet: "RCA Sound Systems." Write: Dept. 70-142A, Sound Equipment Section, Radio Corporation of America, Camden, N. J.

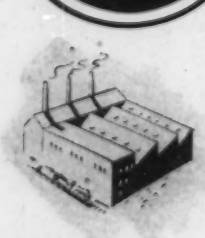
RCA SOUND SYSTEMS

RCA

RADIO CORPORATION OF AMERICA

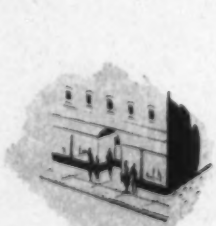
RCA VICTOR DIVISION • CAMDEN, N. J.

LEADS THE WAY . . *In Radio . . Television . . Tubes . . Phonographs . . Records . . Electronics*



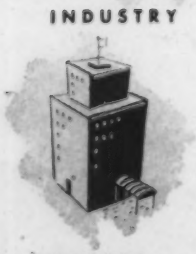
INDUSTRY

OFFICES



STORES

THEATRES



HOTELS

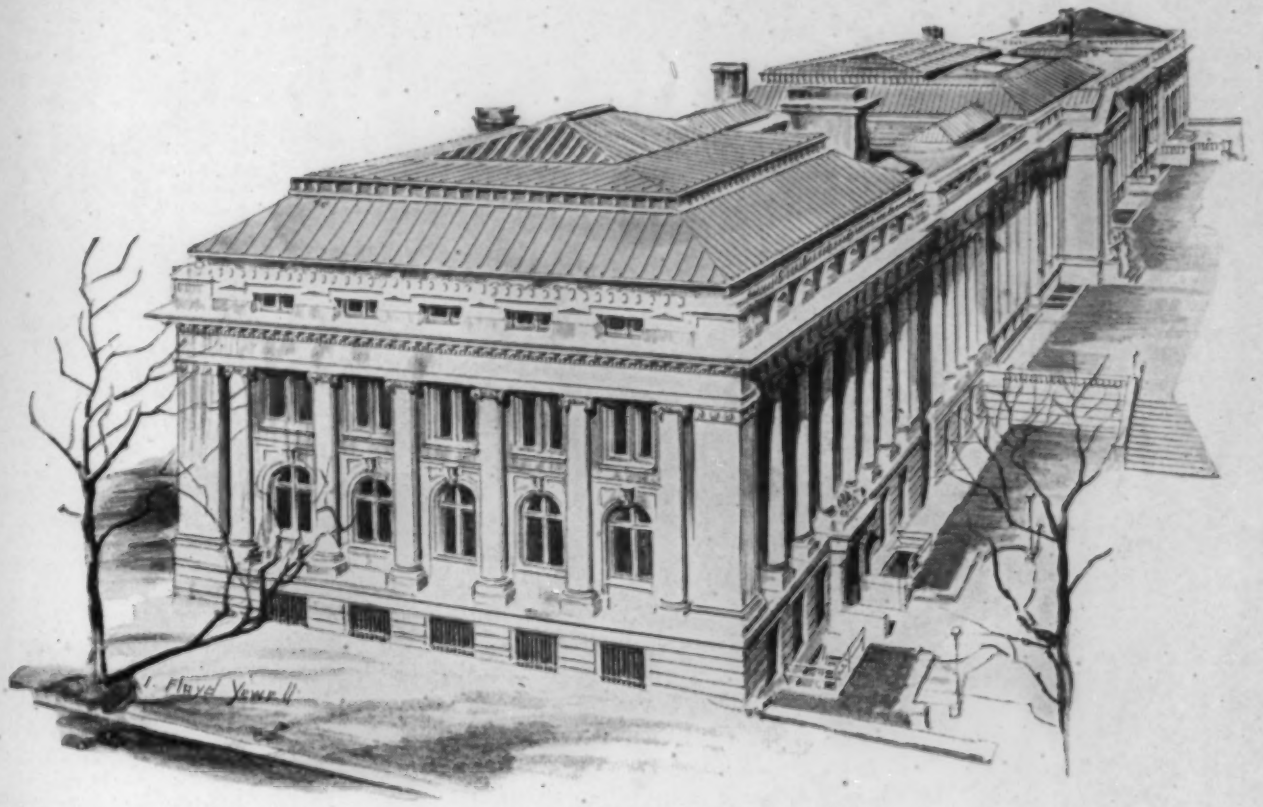
HOSPITALS

SCHOOLS

CHURCHES

70-6336-142

Front to rear, buildings of the Museum of the American Indian, Heye Foundation, Hispanic Society of America and the American Numismatic Society. Architect: Charles P. Huntington. Anaconda Copper Roofing installed by Nicholson & Galloway, Inc., Sheet Metal Contractors.



For 40 Years, the Cost of Maintaining these Copper Roofs has been Negligible

American Geographical Society Building, another unit of the group illustrated above.

AMONG the fine cultural buildings of the city of New York are the impressive structures illustrated. Included in this group are buildings of the Hispanic Society of America, the American Numismatic Society, the American Geographical Society of New York, and the Museum of the American Indian, Heye Foundation.

Three of these buildings were erected in the years 1903 to 1905. The Museum of the American Indian was built later, in 1916. All were roofed with Anaconda Copper by the well-known sheet metal contractors, Nicholson & Galloway, Inc.

A recent inspection by Mr. John E. Nicholson, president of this company, disclosed that these copper roofs are all in excellent condition. Since their installation, cost of maintenance has been negligible.

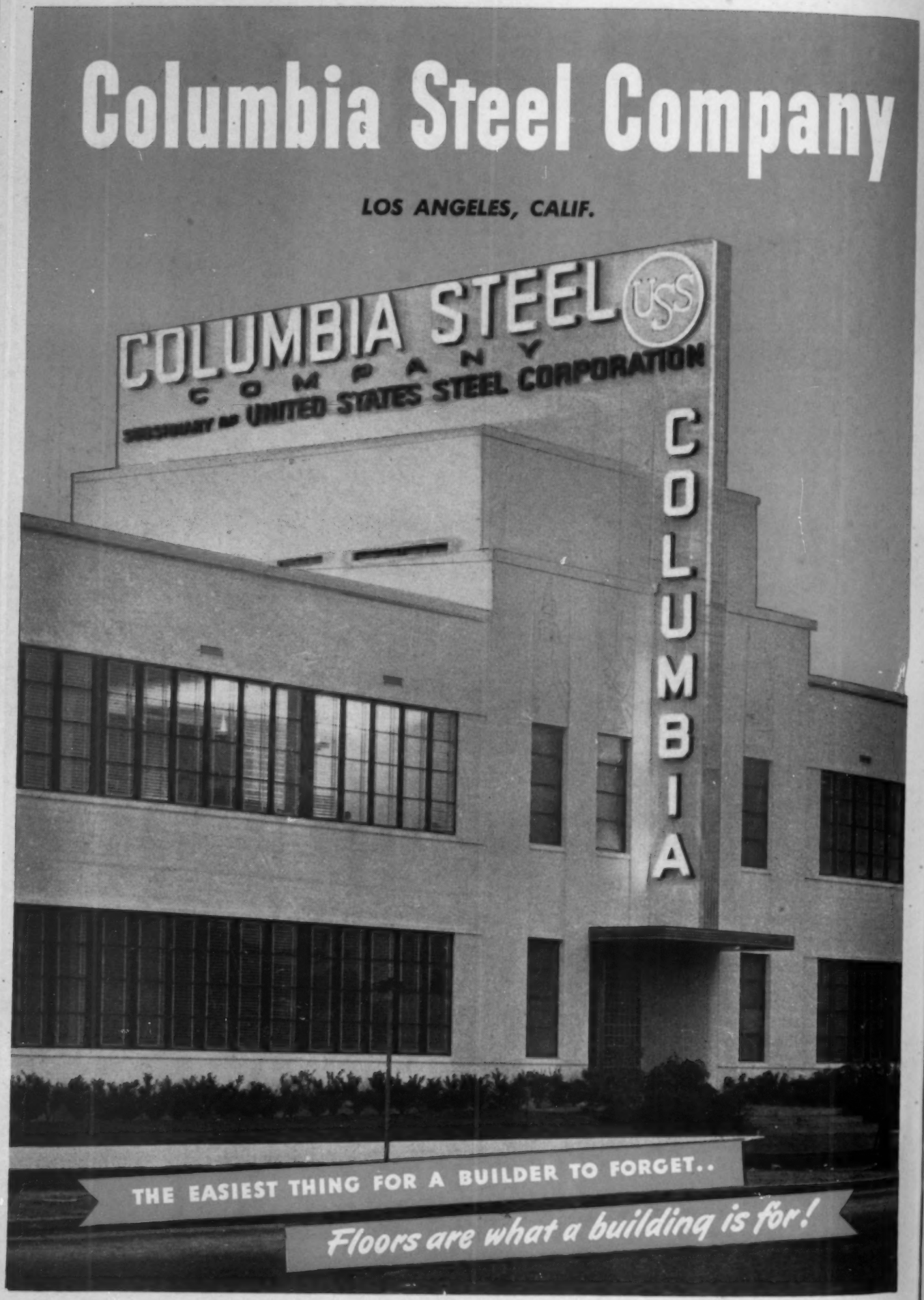
Anaconda Copper for roofing lends itself to any decorative plan. It grows old *gracefully*, providing low cost roof protection. Because of its uniform temper, Anaconda Copper can be readily installed. For detailed information, write for Publication C-3.

Buy VICTORY BONDS . . . Help Assure World Peace

ANACONDA *Anaconda Copper*

THE AMERICAN BRASS COMPANY—General Offices: Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company • In Canada: ANACONDA AMERICAN BRASS LTD., *New Toronto, Ont.*


Columbia Steel Company
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COLUMBIA STEEL
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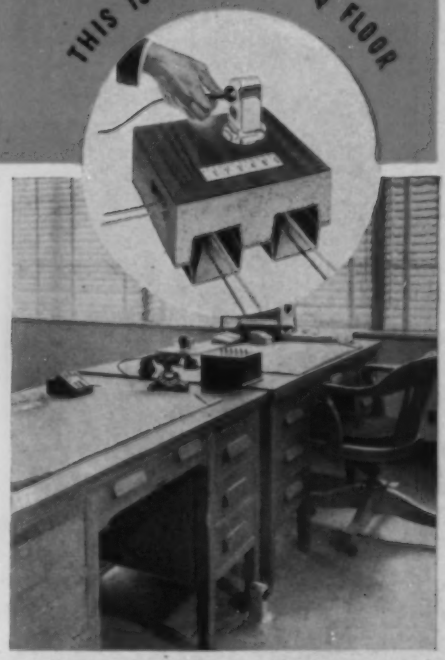
SUBSIDIARY OF UNITED STATES STEEL CORPORATION
COLUMBIA
THE EASIEST THING FOR A BUILDER TO FORGET..
Floors are what a building is for!

built with Q · FLOORS because..

ARCHITECT, EARL HEITSCHMIDT, WANTED THE BUILDING

to stay electrically adequate



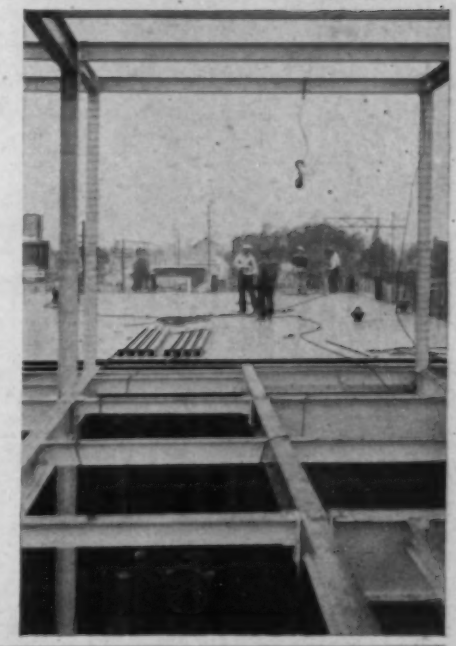
The buildings you design now have to meet the unknown electrical demands of 10 years from now. To keep from electrical obsolescence, floor plans must be capable of quick, easy change.

With Q-Floors you don't give a second thought to floor plans. Partitions can be rearranged weekly. New outlets can be demanded by the dozen. Q-Floors are steel cells, crossed over by electrical raceways. An electrician can drill in any six-inch area to establish a new outlet. And he doesn't dig a trench to do it. The whole job, from drilling to plugging-in, is over in a matter of minutes.

If you specify Q-Floors, you specify unlimited electrical availability, right now and as long as your building lasts. With Q-Floors —change is built in.

AND P. J. WALKER CO., CONTRACTORS,

cut building time and saved Columbia money



Q-Floors have a lot of construction advantages. They reduce building time from 20 to 30%. This is money in pocket to your client. His income starts that much sooner from his investment.

Q-Floors come to the job cut to fit and two men can lay 32 sq. ft. in 30 seconds. Q-Floors go in—dry, fireproof, clean and quiet—practically as fast as the frame goes up. They become a platform immediately for all other trades. Everybody keeps going at full speed and this makes a whale of a difference in construction time.

Don't have any hesitation about price because Q-Floors look so good. They're built to sell and the price is right in line. Robertson has thousands of installations.

For details, call a Robertson representative or write for Q-Floor literature. Q-Floor Fittings may be seen at any General Electric construction materials distributor.

H. H. ROBERTSON COMPANY

2404 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 49 Principal Cities
World-Wide Building Service

Q · FLOORS

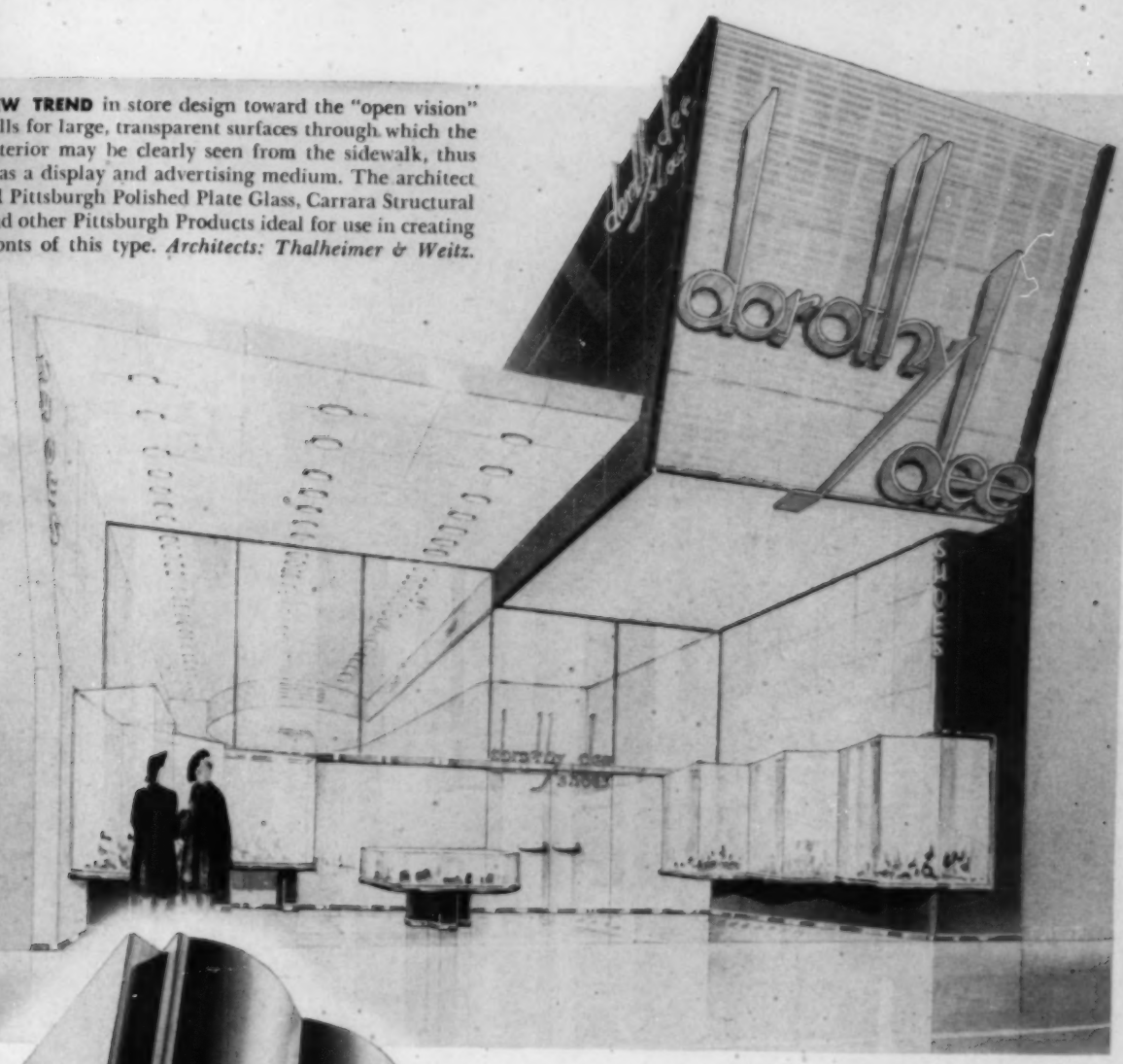
DISTINCTIVE USES OF *Glass*

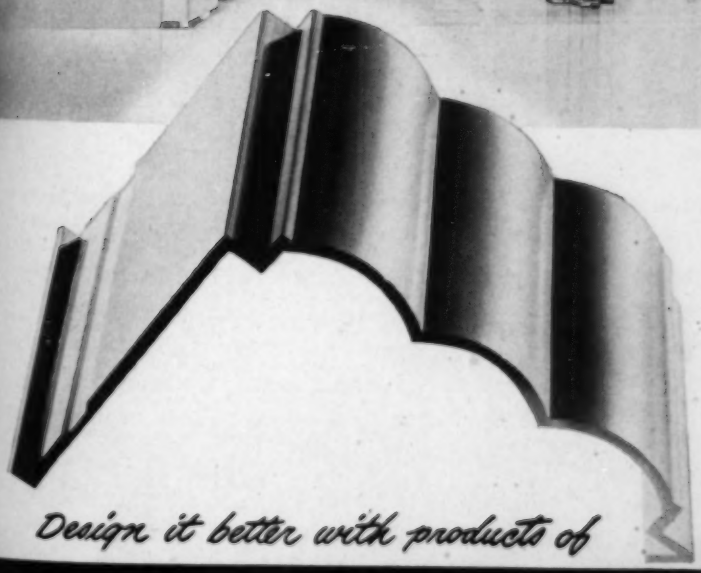
WHATEVER THE STYLE or size of a commercial interior, Pittsburgh Mirrors can make it smarter and more striking. Here, skillfully-designed triplicate mirrors not only function as a practical merchandising aid, but add charm and the illusion of greater size. Pittsburgh Mirrors are now available made from flesh-tinted, blue, green or regular Plate Glass, with silver, gold or gun-metal backings—giving the architect wide latitude in design. (Note attractive glass skylight which helps to achieve good lighting.) *Architect: Harry E. Davidson & Son—G. Leslie Rice, Associate.*

INTERIOR CONNECTING DOORS, or building entrances, take on distinction and beauty when Herculite Plate Glass doors are used. These glass doors permit clear, uninterrupted vision through them. Yet a special tempering process makes them exceptionally resistant to shock and impact—so that they can withstand long, hard usage.

IN COMMERCIAL BUILDINGS

THE NEW TREND in store design toward the "open vision" front calls for large, transparent surfaces through which the store interior may be clearly seen from the sidewalk, thus serving as a display and advertising medium. The architect will find Pittsburgh Polished Plate Glass, Carrara Structural Glass and other Pittsburgh Products ideal for use in creating store fronts of this type. *Architects: Thalheimer & Weitz.*





THE ARCHITECT who wishes to bestow outstanding beauty and quality upon the stores he designs, will find in the two Pittco Store Front Metal lines a metal construction for every need. Pittco DeLuxe and Pittco Premier Store Front Metals were deliberately designed as complete lines, and both possess grace, strength, and fine styling to a superlative degree. The member shown is a Pittco DeLuxe moulding.

Design it better with products of

Pittsburgh Plate Glass Company

"PITTSBURGH" stands for Quality Glass and Paint

We believe you will find much to interest you in our new, illustrated booklet of ideas for the use of Pittsburgh Glass Products in building design. Send the coupon today for your free copy.

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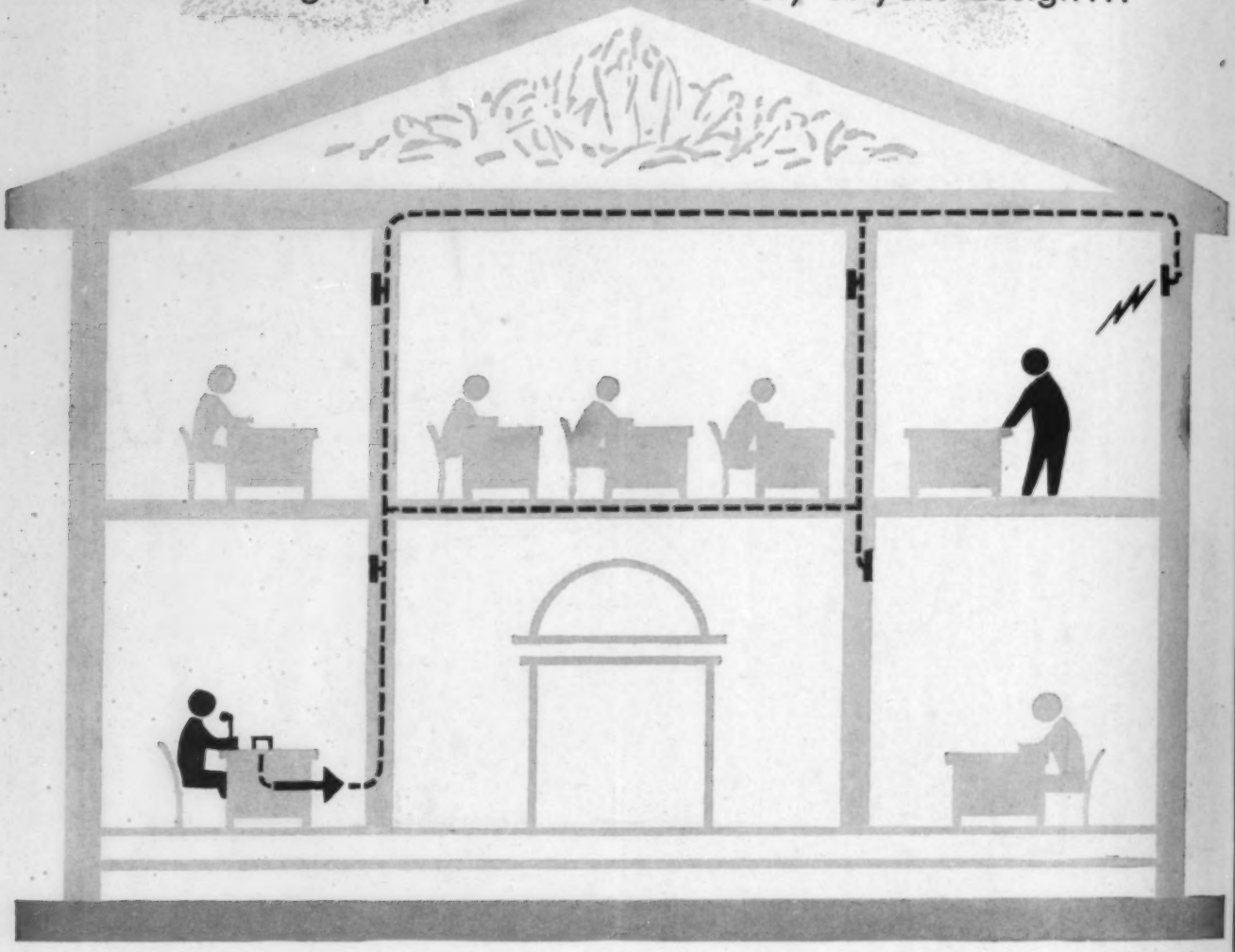
City..... State.....

"... to derive the maximum

practical value

while retaining unimpaired the full beauty of your design..."



THE Sound Systems that have proved most satisfactory to all concerned – architect, client, and manufacturer alike – have usually been those that were designed and engineered throughout as an integral part of the basic plan. Today, we believe you will want to consider an appropriate Sound System in the planning of any sizable building – public, industrial, or institutional.

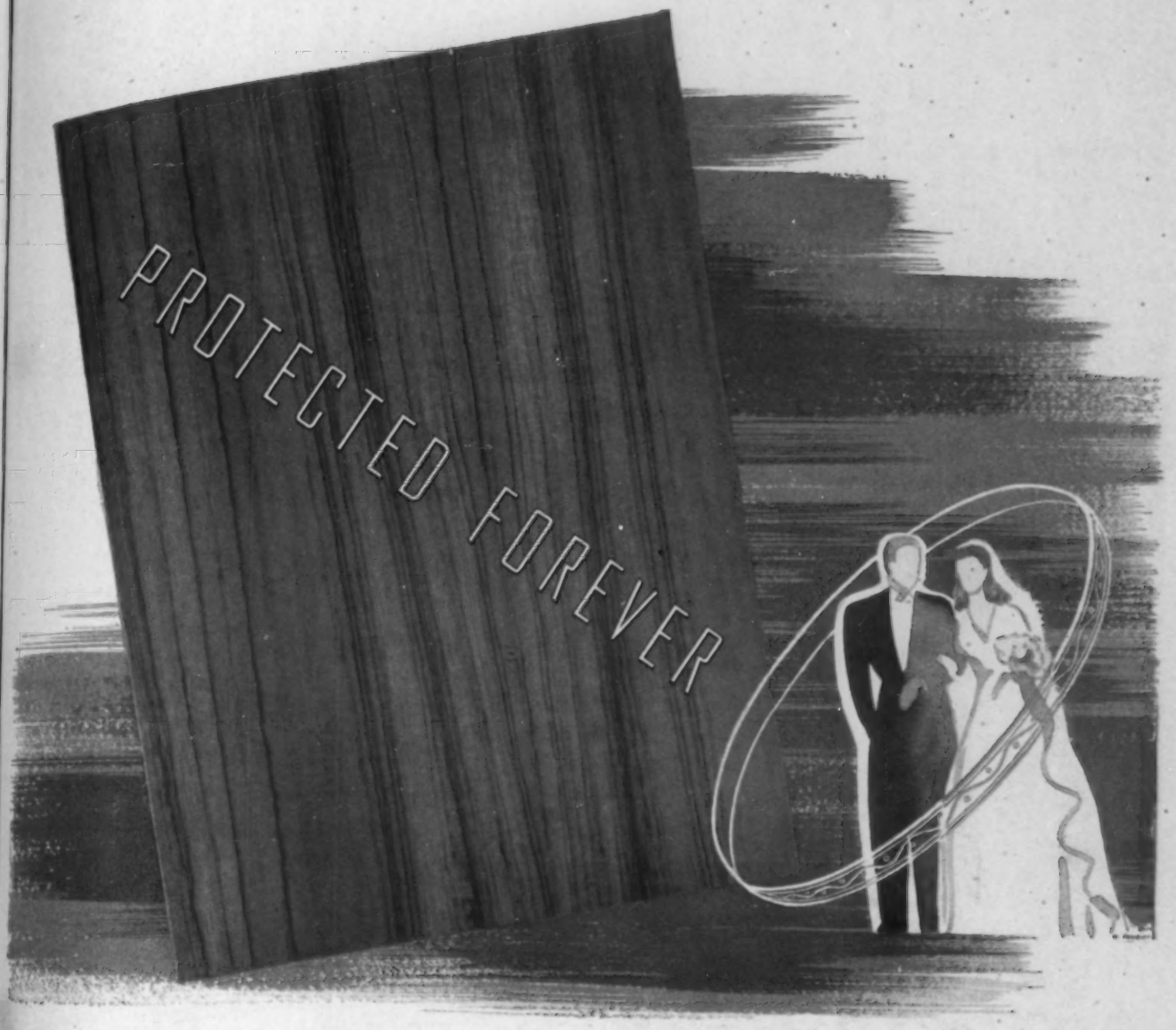
Stromberg-Carlson and its strategically located distributors maintain trained engineering staffs to aid you to get the maximum efficiency from a Sound System, while retaining unimpaired the full beauty of your design. We invite you to make use of this service – of course without cost or obligation. In the meantime may we send you our catalog for your file?

Stromberg-Carlson has furnished Sound Systems for many of the largest and most important of such buildings. To the design and construction of these Sound Systems, Stromberg-Carlson brings an experience of 51 years devoted exclusively to the manufacture of communications equipment.

Consult the classified section of your telephone directory for your local Stromberg-Carlson Sound Equipment distributor. Or write to Stromberg-Carlson Company, Sound Equipment Division, Dept. 132, 100 Carlson Road, Rochester 3, N. Y.

STROMBERG-CARLSON

STRAIGHT-LINE COMMUNICATION



When the designer of Formica laminated plastic "Realwood" placed a clear transparent layer of plastic over a lamination of plastic impregnated genuine veneer and united them in marriage with heat and pressure it is not recorded that he actually said "I now pronounce you man and wife".

But it is a matter of record that no protecting sheet of plastic has ever divorced itself from a Formica "Realwood" wood veneer base. The oldest installations of "Realwood" have only been in use 10 years, but there is every reason to believe that the full bridal beauty of "Realwood" will be cherished and protected as long as the architect and building in which he uses it both shall live.

Formica is protected from moisture, from checking, chipping, or spotting, and from visible abrasion by ordinary wear. It comes in wood finishes, several fabric finishes, and other colors that never fade.

FORMICA

The Formica Insulation Company • 4651 Spring Grove Ave., Cincinnati 32, O.

Re: Corbin Builders Hardware for Small Homes

To the Architectural Profession:

★ Specifying and selecting Builders Hardware for small homes has always been arduous, time-consuming work for architects.

Steps we are taking to simplify this procedure will make specification easier . . . will assure against substitution and insure client satisfaction . . . will save the time of the architect and his staff.

To Building Money Men:

★ "Builders Hardware by P. & F. Corbin" in a specification and on a structure of any type is your guarantee of high quality, trouble-free performance and long service.

To Operative Builders and Contractors:

★ Consistent advertising in Better Homes & Gardens and in American Home will acquaint prospective home buyers with the quality, value and stylishness of good Corbin hardware. It will pay to install and feature "Corbin Builders Hardware" . . . in master-keyed systems for security and prestige.

P. S. In January we will publish further details of the P. & F. Corbin Builders Hardware Merchandising Program. We believe you will be interested.

P. & F. Corbin

Good Buildings Deserve Good Hardware

CORBIN

Division of the American Hardware Corporation New Britain, Connecticut

FIRE can't be scared away

SHEETROCK *Fireproof* WALL *and* CEILING PANELS

No one would expect a scarecrow to fight fire. Yet, many of the 420,000 dwellings which fire attacks every year have only "scarecrow" protection. No wonder progressive architects and builders are constantly seeking safer building materials and methods.

One safer building material is Sheetrock*, the fireproof wallboard. Time after time, these big panels of gypsum have proved their worth under actual fire conditions. They kept the flame in check till help could arrive.

Plan to use Sheetrock on your most exacting jobs. You can decorate it by any method . . . you can have smooth surfaces, curved surfaces or attractive paneled effects.

Or, if you want a wood-grained finish, choose Sheetrock in faithful reproductions of knotty pine, bleached mahogany or walnut. This versatility combined with modern protection is the answer to why Sheetrock has been used on more walls and ceilings than any other gypsum wallboard in the world.

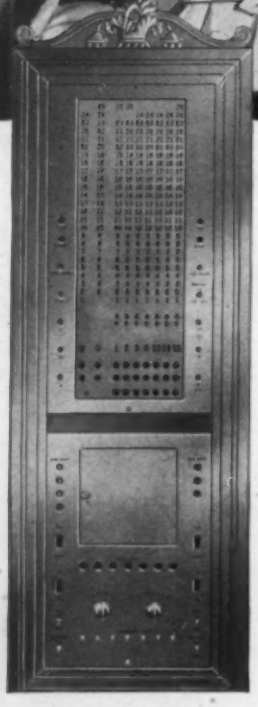
*Reg. T. M.

United States Gypsum

For Building • For Industry

Gypsum · Lime · Steel · Insulation · Roofing · Paint

OTIS *Dispatching* FOR IMPROVED ELEVATOR SERVICE



Dispatching Panel: Indicates position and direction of travel of the car and the location of waiting passengers.

Otis Elevator dispatching methods and equipment can help correct congested elevator traffic conditions.

This scientific system of elevator operation and dispatching provides the highest quality and maximum quantity of service for a given number of elevators.

Otis dispatching is your assurance that every car is doing an equal share —that the flow of traffic is evenly distributed over the entire plant.

So, when it comes to new elevator installations or getting more work from your present equipment, investigate the possibilities offered by Otis dispatching equipment.

Your Otis representative is ready now to help you and your Architect plan the correct type of dispatching system best suited to your needs. For the finest in vertical transportation tomorrow, call your Otis representative TODAY.

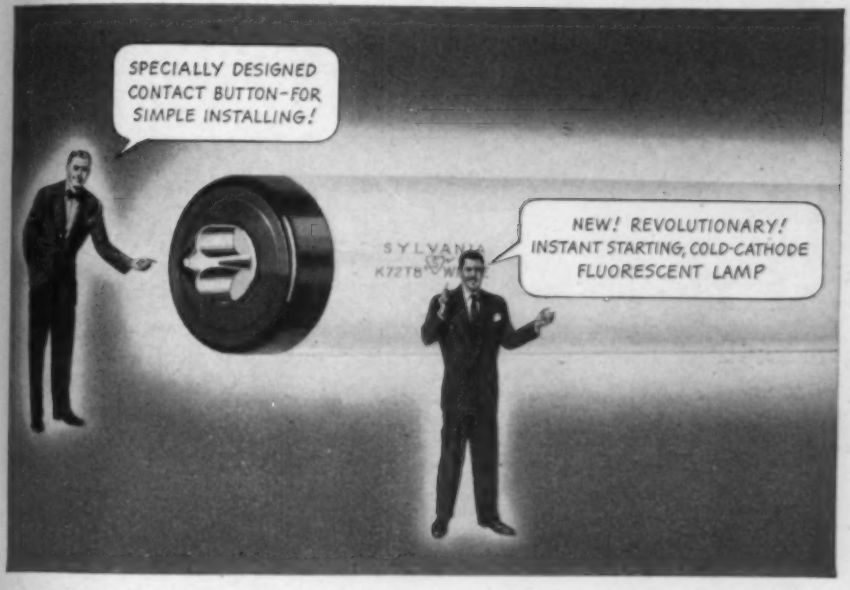
Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

SYLVANIA NEWS
ARCHITECTURAL EDITION

DEC. *Published by* SYLVANIA ELECTRIC PRODUCTS INC., Salem, Mass. 1945

FIRST INSTANT START, COLD-CATHODE FLUORESCENT (K) LAMPS PRODUCT OF SYLVANIA RESEARCH

Another Step In The Completion Of Sylvania Electric's Lamp Line


SPECIALLY DESIGNED CONTACT BUTTON—FOR SIMPLE INSTALLING!
NEW! REVOLUTIONARY! INSTANT STARTING, COLD-CATHODE FLUORESCENT LAMP

Newest of Sylvania Electric's developments—the K Fluorescent Lamp—instant starting, cold-cathode, long-lasting.

Lamp Designation	K96T8	K72T8
Nominal Lamp Length*	96"	72"
Bulb Diameter	T-8	T-8
Lamp Current, Milliamperes	120	120
Life Expectancy, Hours	10,000	10,000

*Measured from back to back of the two lampholders.

Architects, in particular, will be interested in the following special advantages to be derived from installations of Sylvania K (cold-cathode) fluorescent lamps:

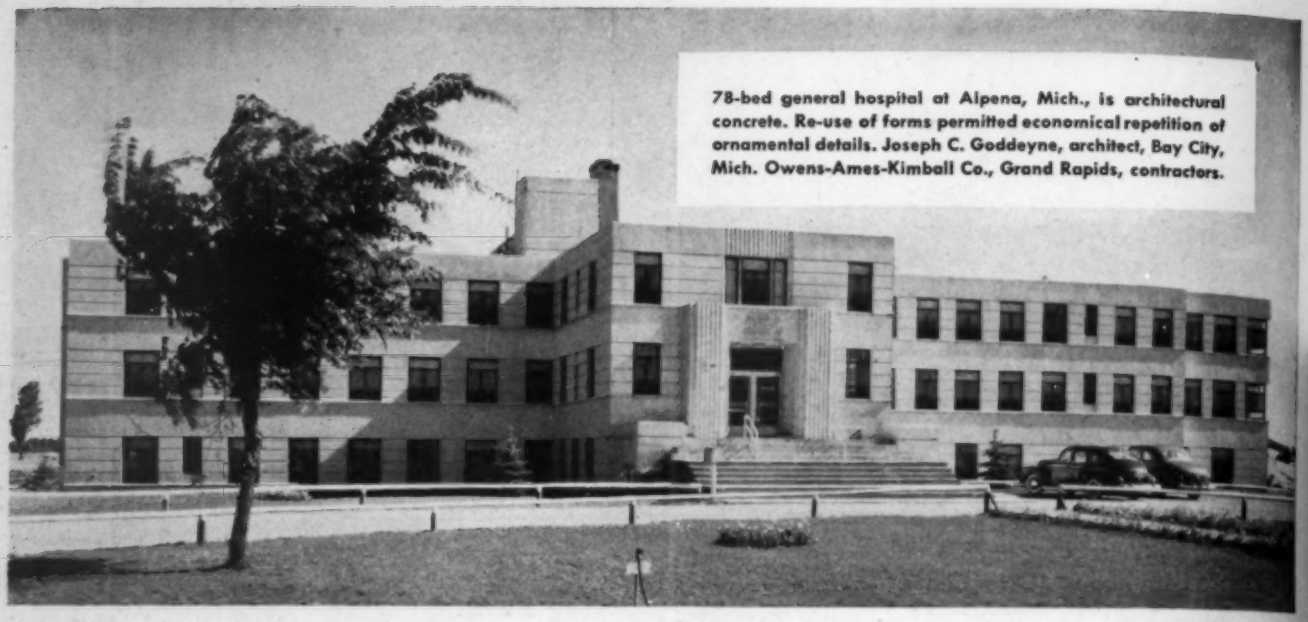
- They will be *instant starting.*
- They will have *a rated life of 10,000 hours.*
- Will be virtually *unaffected by the frequency of on-and-off operation.*
- The base has a *specially designed* contact button for simple installing and maintenance. The lampholder is punched with a hole of similar design so that L-S lamps, similar in size and appearance, cannot be inserted by mistake.
- These lamps can be dimmed.

This newest of Sylvania's developments in fluorescent lighting will be placed on a standard production basis. They will be available early in 1946 through the usual distribution channels—will be made in 48", 72" and 96" lengths of 1-inch (T8) diameter—and will come in the standard white color. Soft white, daylight and a wide variety of other color lamps will be added as the demand arises.

Addition of these *cold-cathode* lamps to the regular line of fluorescent products makes Sylvania Electric the first lamp company to offer a *complete* line of fluorescent lamps.

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES



78-bed general hospital at Alpena, Mich., is architectural concrete. Re-use of forms permitted economical repetition of ornamental details. Joseph C. Goddeyne, architect, Bay City, Mich. Owens-Ames-Kimball Co., Grand Rapids, contractors.

ARCHITECTURAL CONCRETE *for* HOSPITALS

Piedmont Sanatorium, Burkeville, Va., is one of several concrete hospitals designed by Williams, Coile and Pipino, Newport News, Va., John T. Wilson Co., Richmond, Contractor.

●

Dormitory No. 10, one of newest of 35 architectural concrete buildings at Texas Tuberculosis Sanatorium, near San Angelo. Smooth walls formed against plywood are finished with white portland cement paint. Leonard Mauldin, architect, and Templeton & Cannon, contractors, both of San Angelo.

enables architects to stay within limited budgets; design attractive, firesafe, rugged buildings; insure low maintenance expense and low annual cost.

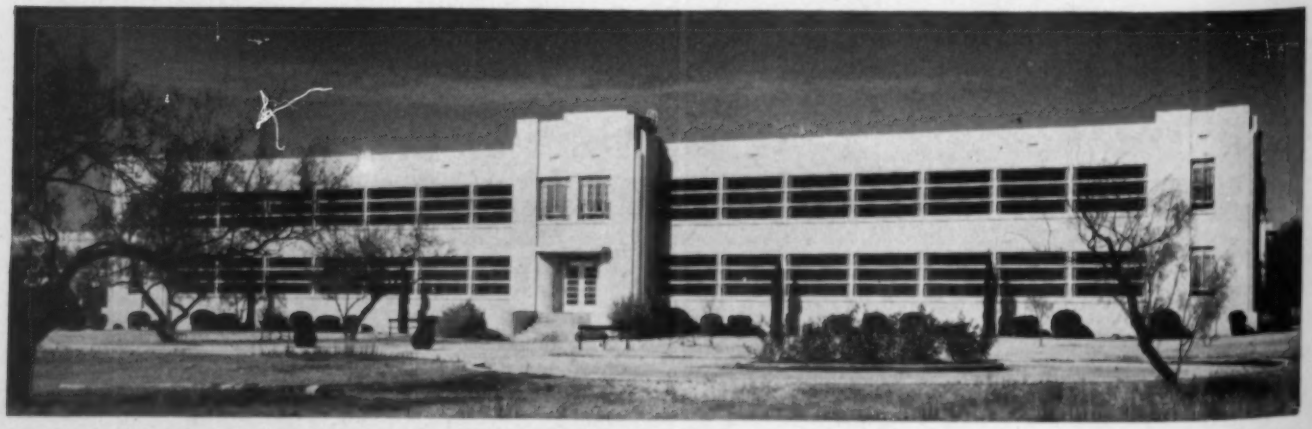
Literature on most recent design and construction practice for architectural concrete mailed free in United States and Canada. See Sweet's Catalog, 4F/3.

PORTLAND CEMENT ASSOCIATION

Dept. A12-8, 33 W. Grand Ave., Chicago 10, Ill.

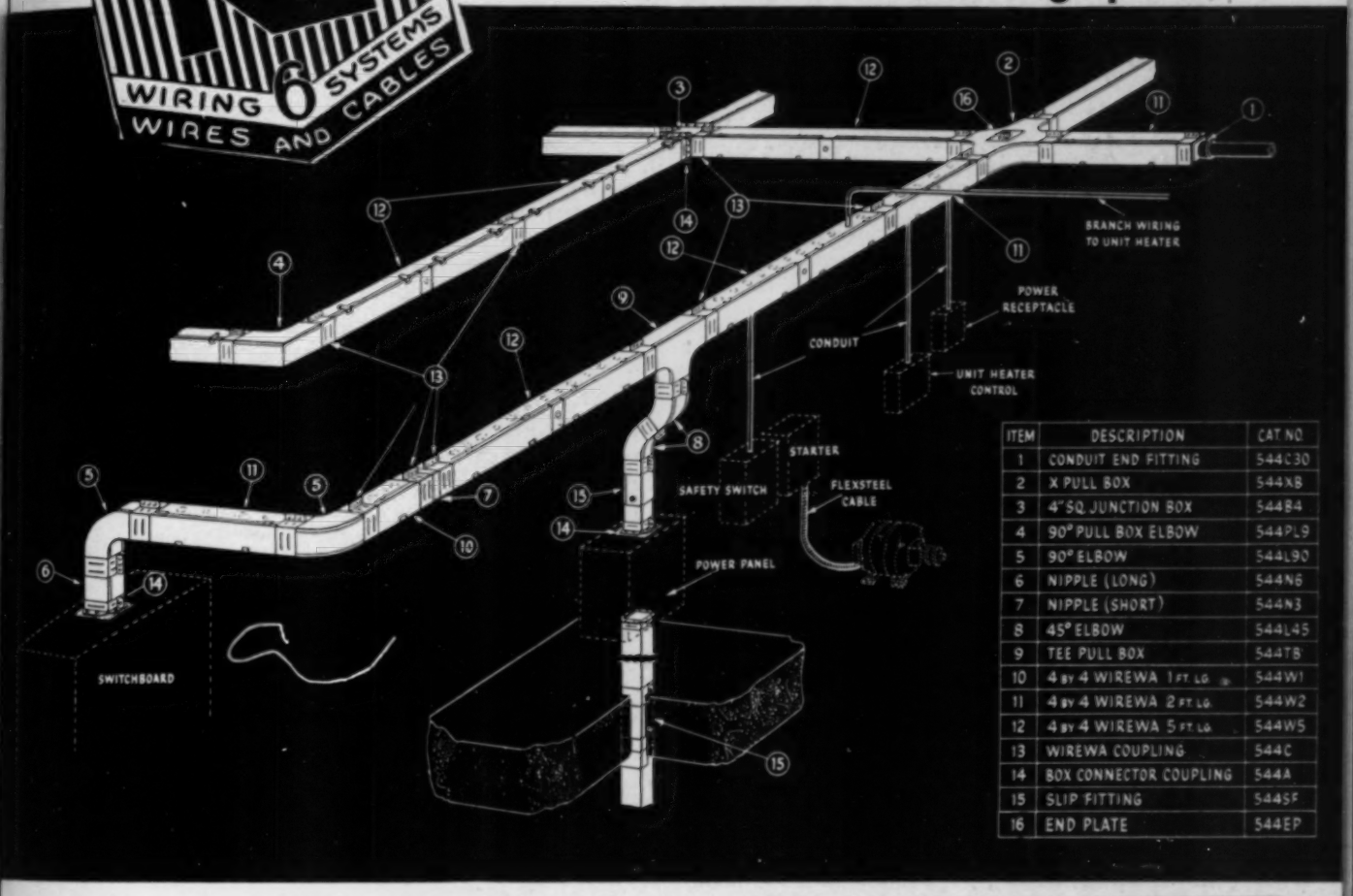
A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

BUY MORE VICTORY BONDS



Specify National Electric "4x4 WIREWA" for industrial extensions and rewiring jobs

NATIONAL ELECTRIC PRODUCTS
WIRING SYSTEMS
WIRES AND CABLES



ITEM	DESCRIPTION	CAT. NO.
1	CONDUIT END FITTING	544C30
2	X PULL BOX	544XB
3	4" SQ. JUNCTION BOX	544B4
4	90° PULL BOX ELBOW	544PL9
5	90° ELBOW	544L90
6	NIPPLE (LONG)	544N6
7	NIPPLE (SHORT)	544N3
8	45° ELBOW	544L45
9	TEE PULL BOX	544TB
10	4 BY 4 WIREWA 1 FT. LG.	544W1
11	4 BY 4 WIREWA 2 FT. LG.	544W2
12	4 BY 4 WIREWA 5 FT. LG.	544W5
13	WIREWA COUPLING	544C
14	BOX CONNECTOR COUPLING	544A
15	SLIP FITTING	5445F
16	END PLATE	544EP

(sketch of a 4x4 WIREWA installation showing complete flexibility, simplicity and use of fittings.)

For housing of plant power systems and extension and rewiring of lines up to 600 volts, specify National Electric 4x4 WIREWA. Complete, easy to install, providing an area of 16 square inches and permitting an unusually high degree of flexibility and accessibility, this system has found wide acceptance in a variety of plants. Write for descriptive literature. National Electric also manufactures a complete line of wires and cables—famous for their long service and saving of space.

A FEW MAJOR REASONS WHY THE NATIONAL ELECTRIC 4 x 4 SYSTEM IS SO POPULAR

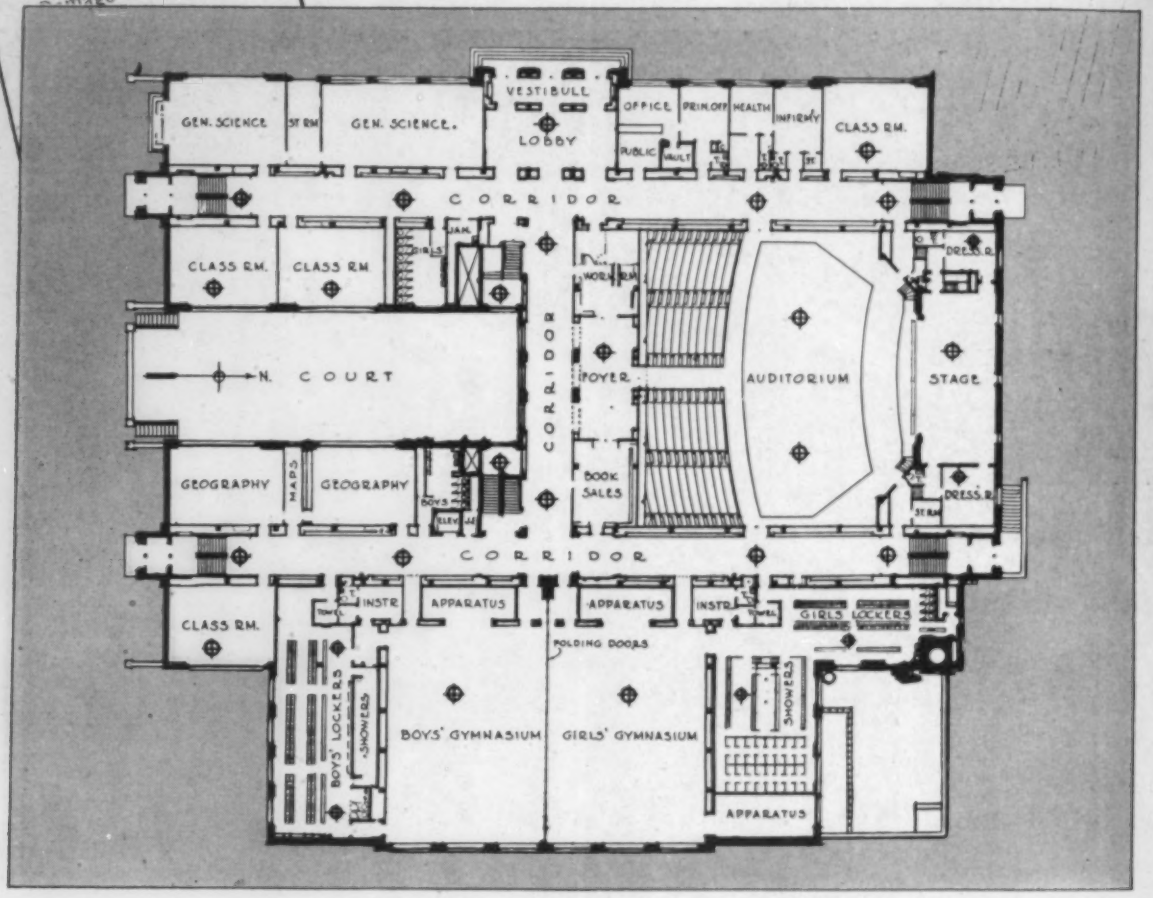
- Maximum usable space permitting greatest number of wires.
- Ease of installation and accessibility for tapping, rerouting, etc., without disturbing existing installation.
- Greater flexibility to meet specific local conditions.
- May be mounted direct to wall or by means of standard hangers suspended from the ceiling.

National Electric Products Corporation
Pittsburgh, Pa.

POWER LINES DAMAGED BY HEAVY SNOW

Several Thousand Dollars Damage Done In Area

SAFEGUARD THE BUILDINGS YOU DESIGN AGAINST SUDDEN LIGHT FAILURES



Floor plan of modern school showing areas safeguarded by emergency lighting. Locations are indicated by symbols (cross in circle).

The failure of electric current may occur anywhere, at any time. Despite all precautions of utility companies, accidents beyond their control can cause interruptions of normal electric current. Storms, floods, fires and collisions strike with little or no warning, and are a serious menace to electric power lines.

You can avoid such light failures in the buildings you design. An Exide Emergency Lighting Unit provides safe, sure, modern protection. Batteries are always fully charged, ready to respond *instantly* and *automatically* when needed.

Exide
EMERGENCY BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

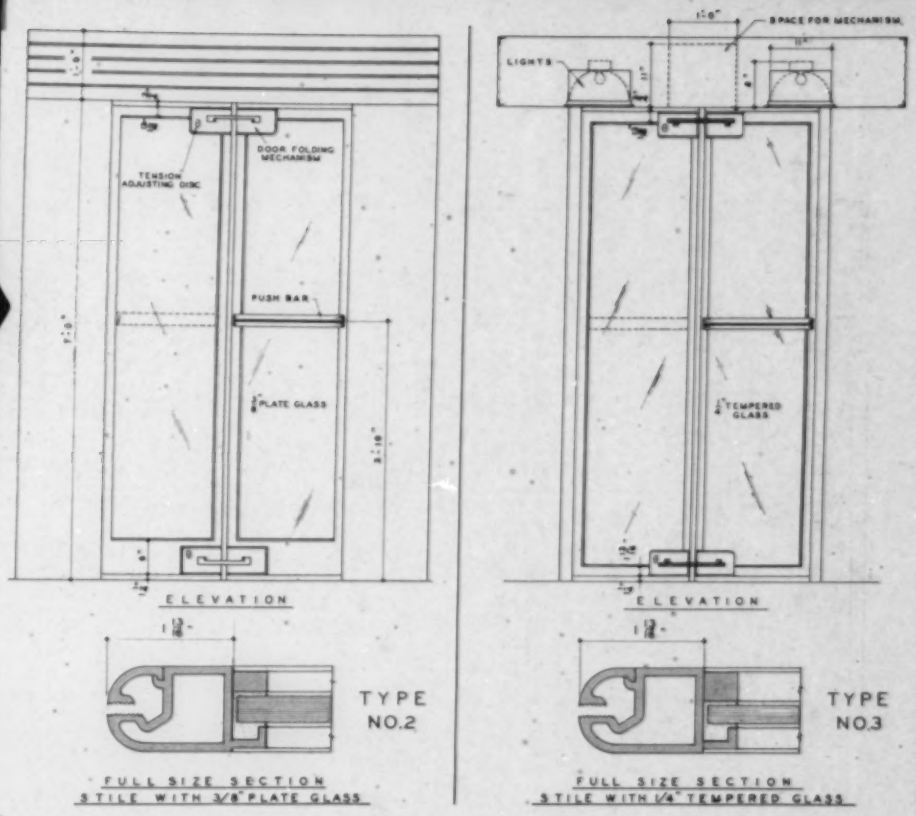
GENERAL BRONZE

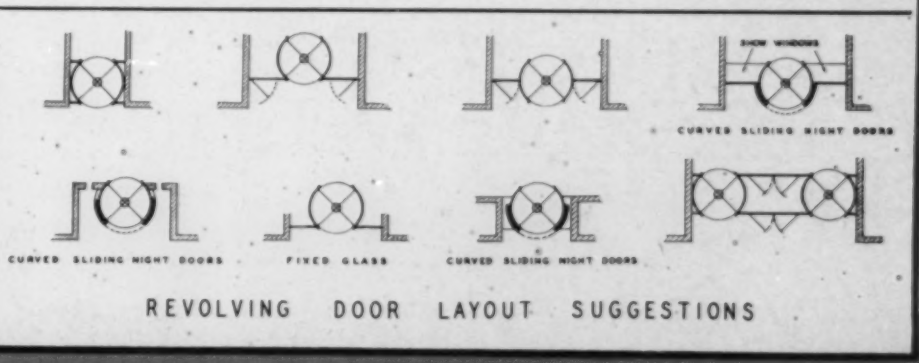
PRESENTS ITS NARROW STILED

REVOLVING DOORS

for modern commercial buildings

DETAILS OF
GENERAL BRONZE
NARROW STILED
REVOLVING DOORS
WITH LAYOUT SUGGESTIONS





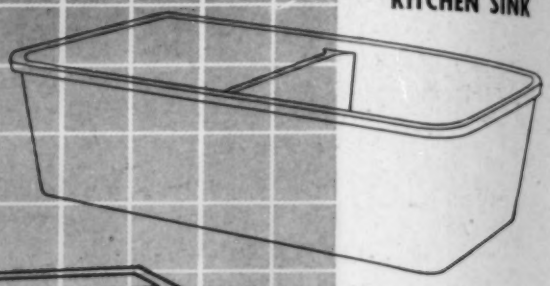
REVOLVING DOOR LAYOUT SUGGESTIONS

SPECIFY **GB** BUILDING PRODUCTS

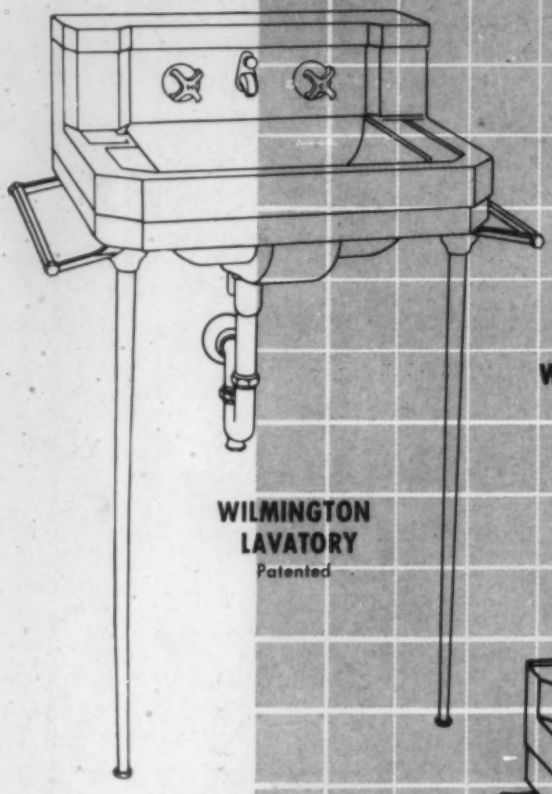
GB revolving doors have been specified by many of the country's foremost architects for their finest buildings. Detailed above is General Bronze's new, narrow stiled revolving door. It is particularly adaptable to modern structures where high visibility is desired.

GENERAL BRONZE CORPORATION
34-15 TENTH STREET LONG ISLAND CITY 1, N. Y.

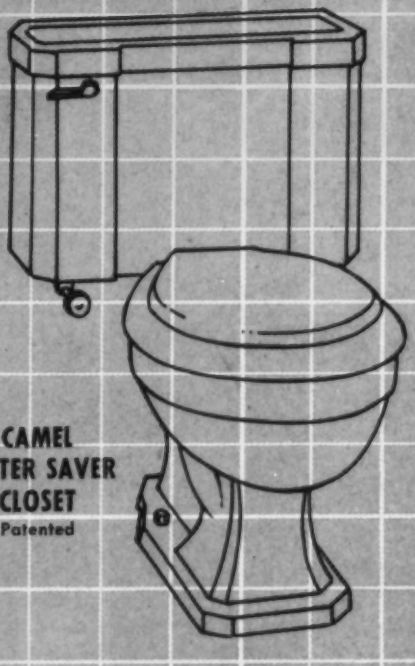
Vitreous China is better...



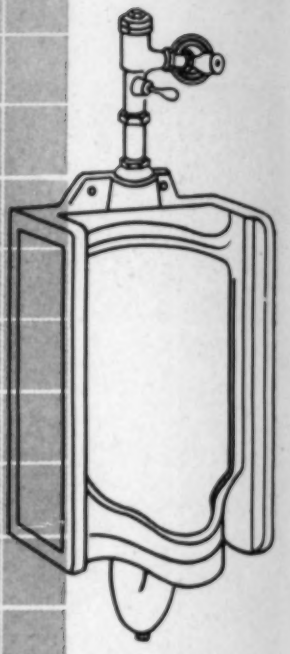
2-COMPARTMENT KITCHEN SINK



WILMINGTON LAVATORY
Patented

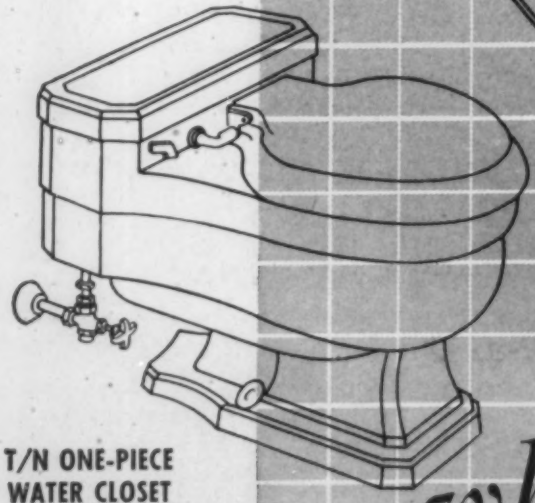


CAMEL WATER SAVER CLOSET
Patented



WALL HUNG URINAL

COSMETTE LAVATORY
Patented



T/N ONE-PIECE WATER CLOSET
Patented

Especially when it's **Case!**

W. A. CASE & SON MFG. CO., BUFFALO 3, N. Y. FOUNDED 1853

Magic Chef

ANNOUNCES A GAS RANGE DESIGN COMPETITION

with $18,000 in Cash Awards

FOR THE BEST DESIGNED GAS RANGE OF TOMORROW

Grand Award	$5,000
Second Award	$3,000
Third Award	$2,000

Fourth, fifth and sixth winners will each receive award of $1,000. The next 10 contestants will each receive award of $500. Contest ends midnight March 4, 1946.

Send the coupon and we'll send you this book of rules

Competition open to

ARCHITECTS • ENGINEERS • ARTISTS DRAFTSMEN • STUDENTS AND OTHERS

with the exception of employees of the American Stove Company, and its subsidiaries, The Architectural Forum, and advertising agencies which serve the American Stove Company and its subsidiaries, and the families of all such employees, or employees of other range manufacturers.

Magic Chef

GAS RANGE DESIGN COMPETITION

SPONSORED BY THE ARCHITECTURAL FORUM 350 Fifth Ave., New York 1, N. Y.

WINNERS WILL BE NATIONALLY PUBLICIZED

GEORGE NELSON, A.I.A., Professional Adviser, c/o The Architectural Forum, Dept. R Empire State Building, 350 Fifth Ave., New York 1, N. Y.

I intend to enter the Magic Chef Design competition. Please send me the program, including the conditions governing the competition and awards.

Name_____

Firm (if any)_____

Address_____

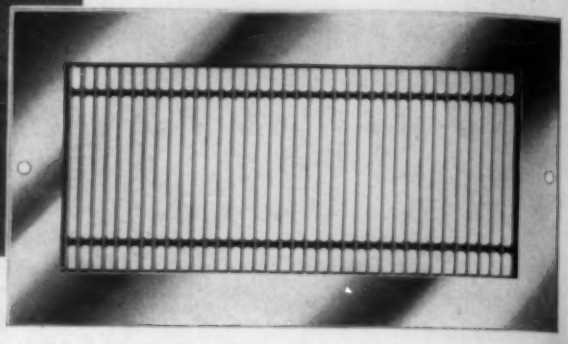
City_____ State_____

Check one: Architect____ Designer____ Draftsman____ Student____

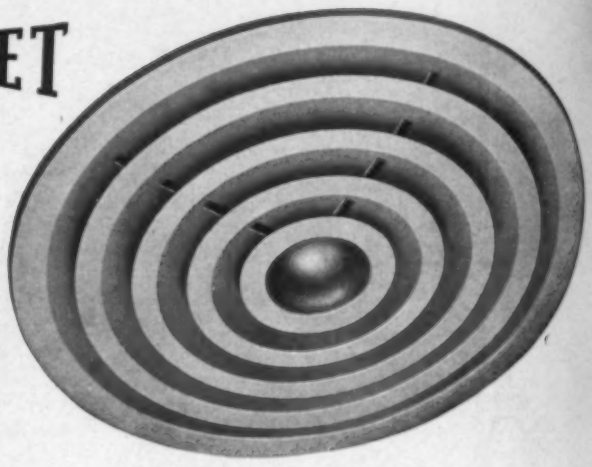
Other Occupation_____

Standardized COPPER CONVECTORS

The Airline Grille is but one of over 50 efficient items for air distribution and control.



AEROFUSE OUTLET



AIR CONDITIONING, HEATING, VENTILATING

What is Your Problem, Sir?

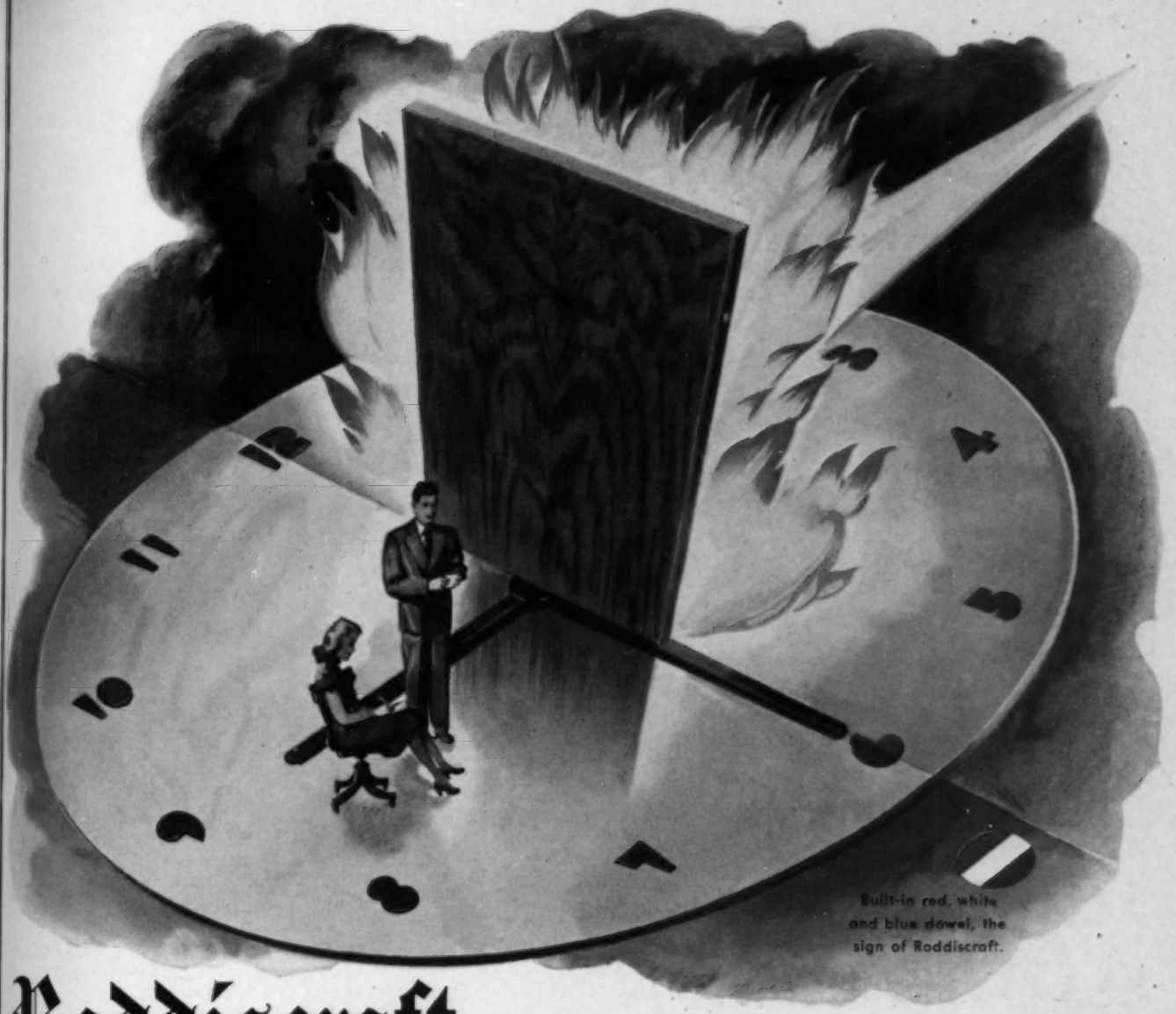
LOOK to Tuttle & Bailey for engineered products for air conditioning, heating and ventilating. The Aerofuse Outlet, efficient ceiling diffuser—the fully standardized line of good-to-look-at and singularly economical-to-operate copper convectors and a host of grilles, registers, air control devices for distribution of air under every sort of condition. A line of quality — a line of built-in efficiency.

T & B

TUTTLE & BAILEY

INCORPORATED

NEW BRITAIN CONNECTICUT



Built-in red, white and blue dowel, the sign of Roddiscraft.

Roddiscraft STANDARD FLUSH VENEER DOORS

FIRE RESISTANT FOR 30 MINUTES . . .

A fire confined for 30 minutes, 9 out of 10 times is a fire under control. Tests show that RODDISCRAFT *Solid Core* flush veneer doors will successfully resist a blaze for 30 minutes — ample time to extinguish it.

Solid construction gives this extra safety feature—face, crossbanding, core and edge strips fused into a single inseparable unit, with plastic glue—exclusive RODDISCRAFT standard construction.

RODDISCRAFT construction is also proof against water and moisture — highly resistant to the passage of sound.

RODDISCRAFT features enable architects to incorporate the beauty, warmth, and richness of wood doors into all building designs.

Every structure deserves the combined protection and beauty of RODDISCRAFT Flush Veneer Doors.

Doors especially constructed to resist fire for longer periods are also made by Roddis.

Roddiscraft WAREHOUSES

CAMBRIDGE 39, MASS., 229 Vassar St.
CHICAGO 8, ILL., 1440 W. Cermak Rd.
CINCINNATI 2, OHIO, 457 E. Sixth St.
DALLAS, TEXAS, 2615 Latimer St.
KANSAS CITY 8, MISSOURI, 2729 Southwest Blvd.
LOUISVILLE 10, KENTUCKY, 1201-5 S. 15th St.
LONG ISLAND CITY, N.Y., Review & Greenpoint Ave.
MARSHFIELD, WISCONSIN
MILWAUKEE 8, WIS., 4601 W. State St.
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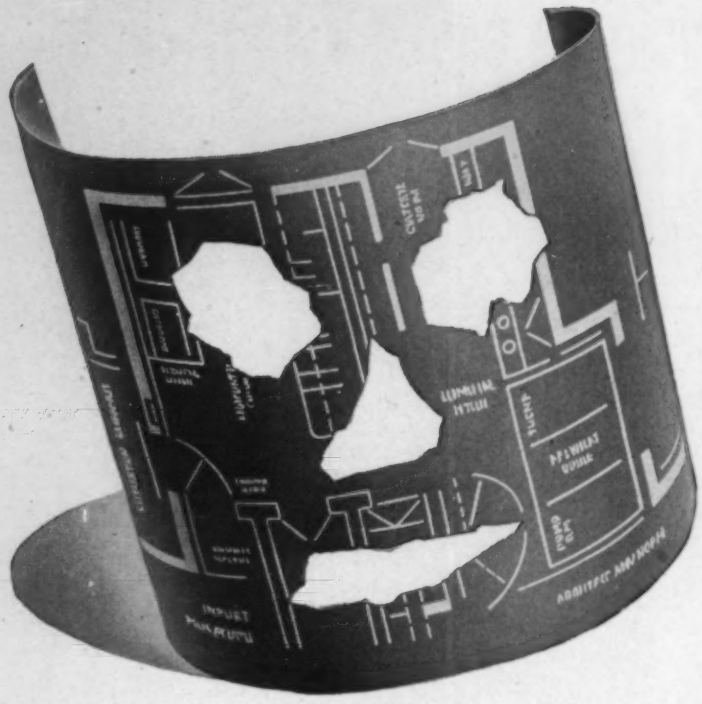
DEALERS IN ALL PRINCIPAL CITIES

See Sweet's Architectural File for complete door line and specifications.

FROM TIMBER TRACT TO BUILDING SITE--
It's Roddis All the Way

Roddiscraft
Roddis Lumber & Veneer Co.
MARSHFIELD, WISCONSIN



Plans often mask problems

Blueprints of Cleveland's Union Terminal show 3 miles of expansion joints. But you could search the building, and never find so much as an inch.

The entire 3 miles is completely inaccessible. Once installed, the expansion joints are "on their own" without benefit of maintenance.

They have to resist heat and cold . . . rusting by fog and condensation . . . corrosion by vapors . . . fatigue by ever-changing stress.

. . . *and they do!* For they're made of Monel.*

Throughout the construction field, Monel is doing all sorts of jobs. Some—like Monel roofs and food service equipment—are daily visible. Some—like the Monel tie-wire used to secure partitions and metal lath—are buried within the building. Others—like the Monel valve seats in better faucets—are hidden in equipment.

Frequently (as with expansion joints) the trouble-free performance of Monel goes on unnoticed.

That's the way Monel works. You can specify . . . install . . . and forget. There's small chance for eventual failure to bring it to your attention.

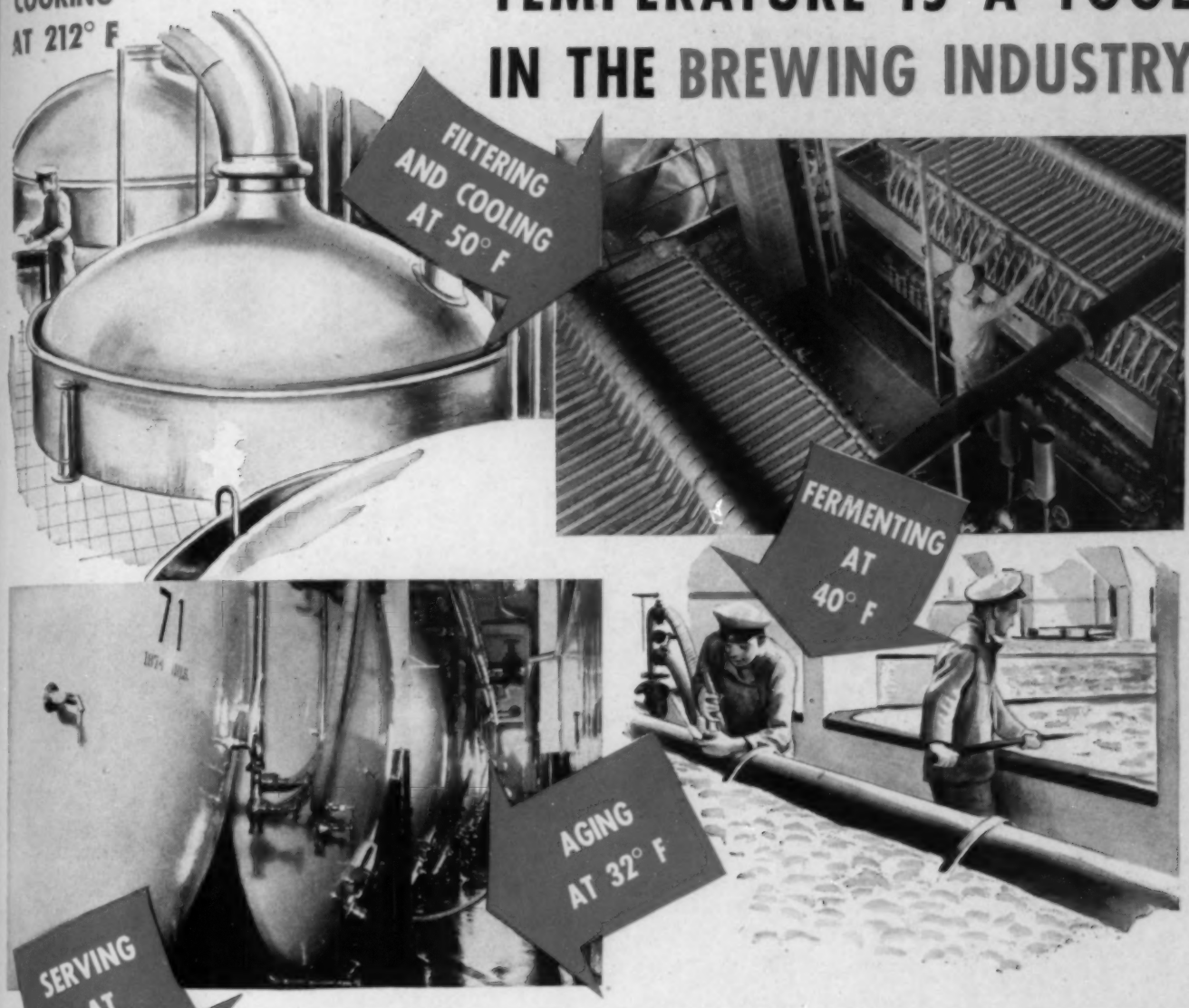
That's why we always say: *"If it's made of Monel, it will last."*

*Reg. U.S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall Street, New York 5, N. Y.

MONEL . . . for minimum maintenance

TEMPERATURE IS A TOOL IN THE BREWING INDUSTRY



Photographs courtesy F. & M. Schaefer Brewing Co.

Insulation is important to makers of beverages to sustain the slight but vital temperature differentials required for purity and flavor. Almost every industry today uses high or low temperatures as tools—and keeps those tools efficient with insulation. For more than 40 years, Armstrong's insulation contract service has been serving industry with: (1) practical engineering help; (2) materials of tested efficiency; (3) skillful installation. You are invited to use this triple service when planning any industrial construction where temperature is a tool. For complete information, write to Armstrong Cork Company, 2412 Concord Street, Lancaster, Pennsylvania.

ARMSTRONG'S INDUSTRIAL INSULATION

Complete Contract Service For All Temperatures

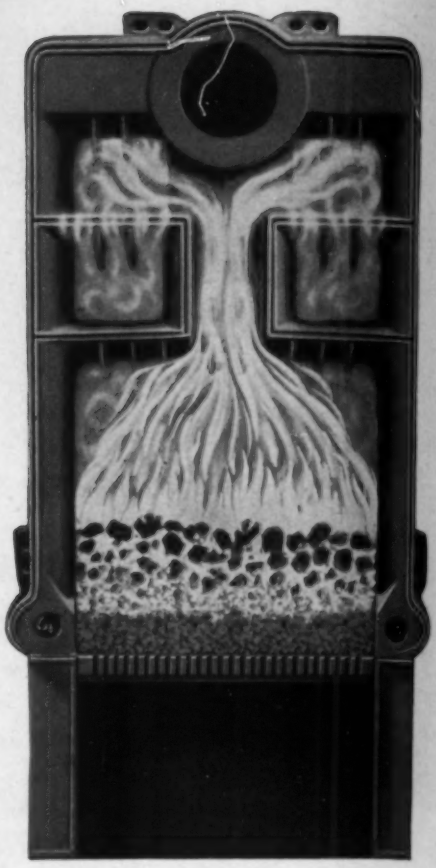
From 300° Below Zero

To 2600° Fahrenheit

BURNHAM'S EXCLUSIVE

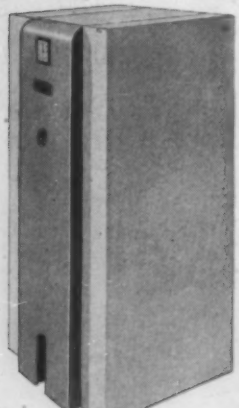
double combustion

FEATURE HELPS MAKE THIS FUEL-SAVING BOILER A BEST SELLER

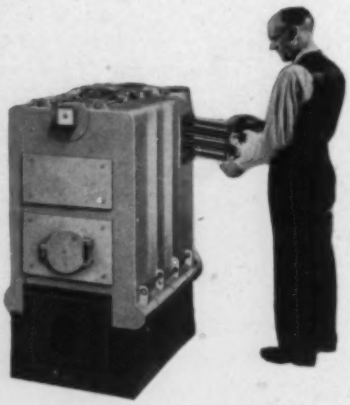


There is an important difference between Burnham's YELLO-JACKET and other types of Boiler—a difference that makes it *easier for you to sell.* This feature is the exclusive Double Combustion Chamber, which materially increases the area of the direct heating surface so that more heat is delivered to the water in the boiler from the fuel burned.

YELLO-JACKET is a modern, streamlined All-Fuel boiler—burning coal, oil or gas with only minor changes. And every unit is backed by the Burnham name and Burnham guarantee. This means a lot, when you remember that Burnham's reputation for *quality* is second to none.



YELLO-JACKET Boiler—fully enclosed, streamlined, and attractively colored—is as handsome as a piece of furniture.



The Burnham YELLO-JACKET Boiler takes either the Built-in Taco Tankless Hot Water Heater or the Built-in Taco for use with Storage Tank.

Burnham's Latest Development in RADIANT HEATING

Everybody is talking about Burnham's new BASE-RAY Radiant Baseboard. Heats rooms more comfortably and attractively than ever before by radiant rays from a hollow, cast iron "baseboard" which extends along outside walls and is only 7" high and 1¾" deep. It's the BIG NEWS in heating—for new homes and modernizing old ones!

Burnham Boiler Corporation

IRVINGTON, N.Y., Dept. R125
Export Department
50 CHURCH ST., NEW YORK 7, N.Y.

I·B·R — INSTITUTE OF BOILER AND RADIATOR MANUFACTURERS · MEMBER

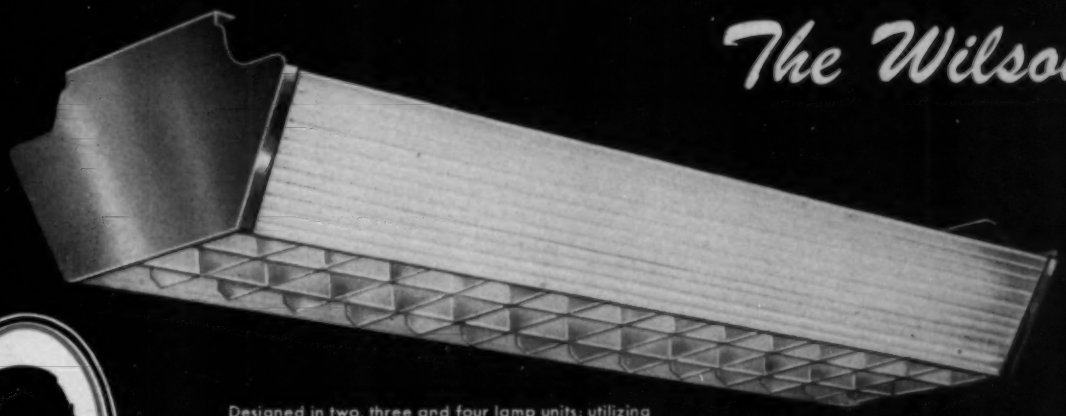
Burnham RADIANT HEATING SINCE 1873

Another in the

Presidential Series

OF *NEWLY DESIGNED* FLUORESCENT LUMINAIRES

The Wilson



Designed in two, three and four lamp units; utilizing 40-watt, T-12 fluorescent lamps. Hinged, egg-crate louver bottom, iridescent Linex glass side panels.

Distinctive . . .

Outstanding in appearance. Smart in design . . . styled in perfect taste.

Functional . . .

Scientifically engineered to give long and lasting performance at peak lighting efficiency.

Flexible . . .

Surface mounted . . . or suspension mounted with Hanger AH-200—individually or in continuous row.

This is an installation utilizing "The Wilson," A-4440 4-lamp Luminaire in continuous row.

Pittsburgh Permaflector "Presidentials" are leaders in the field of fluorescent luminaires. Like all leaders—they are outstanding for many superior characteristics . . . the result of 30 years experience in the design and manufacture of quality lighting equipment.

The Wilson, typical of this series, offers the utmost in beauty and utility. Scientifically *and* distinctively designed—*The Wilson* is adaptable to a wide range of applications.

Investigate the "Presidential Series" of Fluorescent Luminaires and the entire line of *Pittsburgh Permaflector* Fluorescent and Incandescent Lighting Equipment. *Pittsburgh Permaflectors* are engineered for maximum efficiency . . . simple installation . . . easy maintenance.

Pittsburgh Reflector Company

OLIVER BUILDING • PITTSBURGH 22, PA.

MANUFACTURERS OF PERMAFLECTOR LIGHTING EQUIPMENT
DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

Permaflector Sales Engineers in All Principal Cities

PERMAFLECTORS • SPOTLIGHTS • FLOODLIGHTS • WIRING DEVICES • FLUORESCENT EQUIPMENT

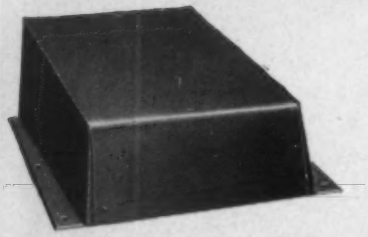
"Pittsburgh" Permaflector

CONCRETE JOIST CONSTRUCTION

Preferred 2 to 1

Ceco never guesses. We have always known concrete joist construction had definite advantages, but we wanted to find out what builders everywhere thought. So we employed independent investigators on a nationwide census to get the whole story. The result was surprising even to us. Architects — contractors — engineers — all across America—those who know building best prefer concrete joist construction two to one. Here are their reasons:

1. **Lower cost construction**
2. **Speeds up building**
3. **Provides rigid, strong, permanent, soundproof buildings**
4. **Assures fire-resistive construction**

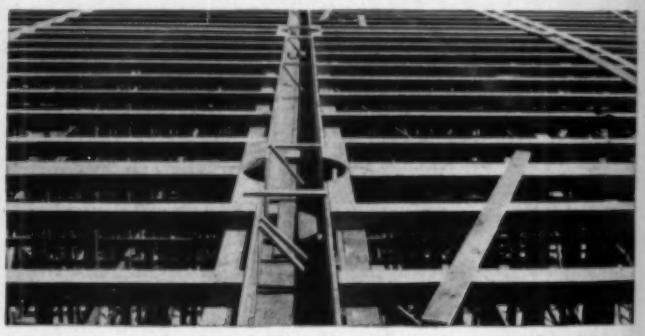


22 OFFICES TO SERVE YOU

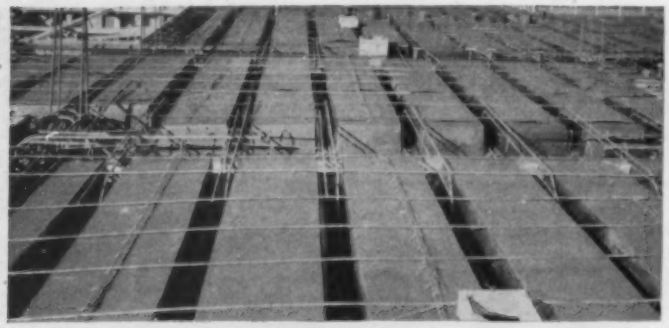
Wherever you are in the United States, there's a Ceco office strategically located to serve you. That means Ceco Meyer Steelforms for concrete joist construction are quickly available with fast delivery from the closest warehouse. Just write Ceco at the address below—we will put you in touch with your regional Ceco service headquarters.

← *Typical Meyer Steelform shown at left.*

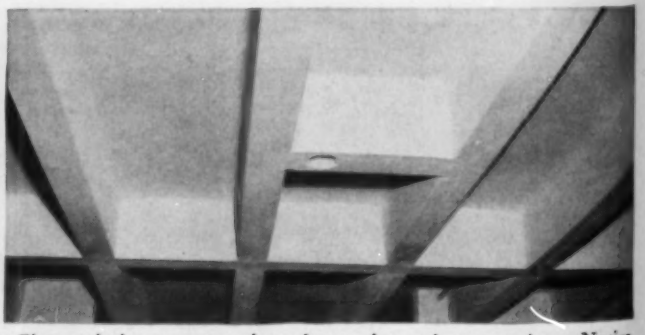
Ceco engineers in 22 offices are always ready to help you in the preparation of designs and estimates—to help you cut costs and save time. Feel free to call on the Ceco organization for service on your jobs.



Simple open wood centering is all that is required in Meyer Steelform construction. The centering may be re-used from one floor to another, as can Meyer Steelforms. This eliminates extra lumber costs, saves time.



Above is a Ceco supervised job showing how Meyer Steelforms are correctly placed to eliminate leakage of concrete and insure accurate execution of structural design. Ceco experts supervise placing of Steelforms.



Fire-resistive construction shown in a close-up view. Notice the finished character of ceiling joists built with Meyer Steelforms. Concrete joists can be left exposed or a flat ceiling can be attached.

30 YEARS OF EXPERIENCE IN REINFORCED CONCRETE!

CECO STEEL PRODUCTS CORPORATION

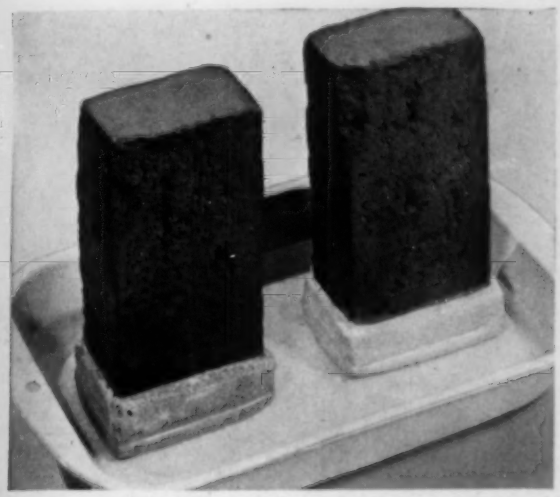
Concrete Engineering Division—5701 W. 26th St., Chicago, Ill.

MANUFACTURING DIVISION, SHEET STEEL AND WIRE DIVISION, HIGHWAY PRODUCTS DIVISION

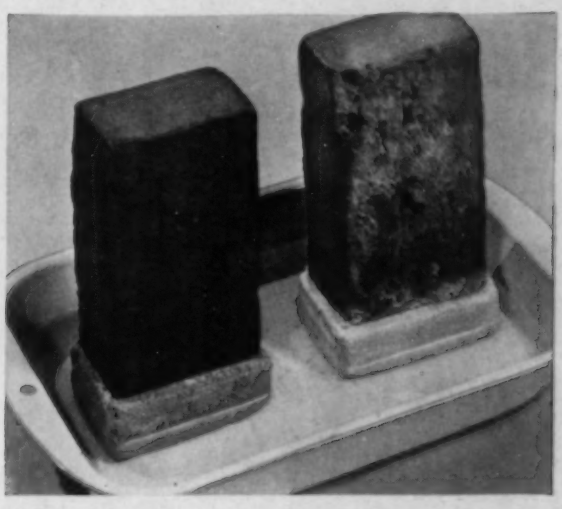
ENGINEERING MAKES THE BIG DIFFERENCE IN CECO CONSTRUCTION PRODUCTS

BRIXMENT MORTAR

Helps Prevent Efflorescence



To test two mortars for resistance to efflorescence, "cap" two brick heavily with the mortars — let harden, and



keep both brick for a few weeks in a shallow pan of water, as shown. Try this with Brixment mortar!

HERE'S WHAT CAUSES EFFLORESCENCE—AND WHY BRIXMENT MORTAR HELPS CONTROL IT

Efflorescence is an outcropping of minute white crystals on brickwork. When these crystals occur on colored mortar joints, the condition is sometimes mistaken for *fading.*

Efflorescence is caused by the presence of soluble salts in masonry materials. When reached by water, these salts dissolve, and are drawn by evaporation to the surface of the wall.

Brixment itself *does not cause efflorescence* because it is practically free from soluble salts. Even when such salts are present in the sand or brick, the waterproofing in Brixment usually *prevents them from coming to the surface.*

Bricklayers who have used Brixment mortar for years say they have far less efflorescence with Brixment than with any other mortar.

LOUISVILLE CEMENT CO., Incorporated, LOUISVILLE 2, KENTUCKY

CEMENT MANUFACTURERS SINCE 1830

ATOMIC BOMB PLANT
Oak Ridge, Tenn.

About 175 acres of Barrett Roofs were used in the construction of Manhattan Project's Atomic Bomb plant and this 75,000-population city. Barrett Approved Roofers: Interstate Roofing Co., Anniston, Ala., G. G. Ray & Co., Charlotte, N. C., and Tennessee Roofing Co., Knoxville, Tenn.

IMPORTANT AT IMPORTANT PLACES

. . . 7,620,000 sq. ft. of BARRETT ROOFS!

NEVER has the need for dependable roof protection been more clearly highlighted than in the construction and operation of the U. S. Government's Manhattan Project, at the Clinton Engineer Works, Oak Ridge, Tenn. For here, under direction of the War Department, the united efforts of science and industry culminated in the atomic bomb, the most potent military weapon and greatest scientific achievement in history.

In the vital race against time and the Axis, no delays or interruptions in production could be tolerated. Plant and equipment had to operate at complete efficiency *all of the time.*

Barrett is proud to have had a not unimportant part in this mammoth project. The 7,620,000 sq. ft. of Barrett Roofs applied at Oak Ridge constitutes one of the largest single orders for roofing materials in the history of the industry. It included 4,500,000 sq. ft. of Barrett Coal-tar Pitch and Felt built-up roofs, and 3,120,000 sq. ft. of Barrett Dublecote Shingles and other prepared roofings used principally for workers' homes, schools and stores.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N.Y.
2800 So. Sacramento Ave. Chicago 23, Ill. — Birmingham Alabama
In Canada: The Barrett Company, Ltd.
5551 St. Hubert Street, Montreal, Que.

Barrett

55 Footcandles of Maintained Lighting Efficiency!

JOLECO FLUORESCENTS GIVE LIGHT WHERE LIGHT IS NEEDED!

Joleco's NEW J-45

For 2 or 4 20-watt lamps, and 2 or 4 40-watt lamps in 4-ft. lengths, also for 8 40-watt lamps in 8-ft. lengths. 8-ft. fixture has single piece body. Graceful, versatile, of highest efficiency. Incorporates all Joleco's currently released exclusive features. For ceiling or suspension mounting.

Socony Vacuum's, Lubrite Division, ultra-modern Administration Building in St. Louis uses Joleco Fluorescents throughout.

SMART and modern beauty is only one additional advantage gained in this Joleco installation of J-45's. ***Specifically*** engineered for an above-average 55 footcandles of ***maintained*** high intensity lighting, Joleco's J-45 is providing the soft, non-glare, flickerless, trouble-free illumination that assures accuracy of detail and greater smooth-flowing efficiency.

These exclusive Joleco features—

- ★ ***On-the-point lamp positioning to double reflecting surfaces and greatly increase lighting intensity.***
- ★ ***Ventilation method based on principle of air-draft cooling to prolong ballast life and reduce cost.***
- ★ ***One-piece strongly reinforced body to prevent twisting and buckling, and provide easy one-man installation.***
- ★ ***Instantly removable inspection plate to give complete access to fixture body and save time and labor.***

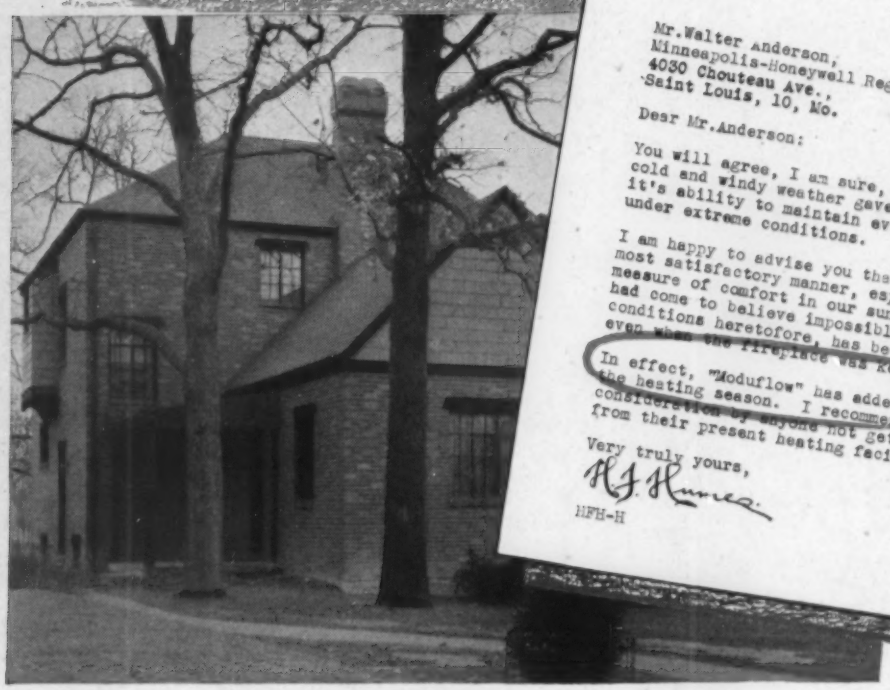
—plus others soon to come offer outstanding values in faster and more profitable installation, reduced maintenance costs, and increased lighting efficiency.

Investigate Joleco Fluorescents before specifying any other fixture—check Joleco's ability to meet the most exacting specifications wherever the best illumination is required. Write today for catalog pages and complete information.

JOLECO
CORPORATION
Designers and Manufacturers
FLUORESCENT LIGHTING FIXTURES
2513-19 BALDWIN ST. ST. LOUIS 6, MO.

"MODUFLOW HAS ADDED A ROOM TO OUR HOME"

WRITES W. F. HUMES
of University City, Mo.



LONG LEAF YELLOW PINE
SHORT LEAF YELLOW PINE
DOUGLAS FIR
WESTERN HEMLOCK
PONDEROSA PINE
IDAHO WHITE PINE
RED CEDAR SHINGLES
RED CEDAR SIDING

PHONE: DELMAR 4087

H. F. HUMES
7446 MELROSE AVENUE
UNIVERSITY CITY, MO.

STRUCTURAL TIMBER
YARD & SHED STOCK
LOGS FOR
INDUSTRIAL STOCK
RAILROAD & CAR
MATERIAL
MOULDINGS
PLYWOOD
LATH

January 15, 1945.

Mr. Walter Anderson,
Minneapolis-Honeywell Regulator Co.,
4030 Chouteau Ave.,
Saint Louis, 10, Mo.

Dear Mr. Anderson:

You will agree, I am sure, that the recent spell of very cold and windy weather gave "Moduflow" a severe test of it's ability to maintain even temperature in our home under extreme conditions.

I am happy to advise you that it handled the job in a most satisfactory manner, especially did it provide a measure of comfort in our sunken studio living room we had come to believe impossible. That room, under like conditions heretofore, has been utterly uninhabitable even when the fireplace was kept in constant use.

In effect, "Moduflow" has added a room to our home during the heating season. I recommend that it be given careful consideration by anyone not getting the utmost in comfort from their present heating facilities.

Very truly yours,

H. F. Humes

HFH-H

What Moduflow has done for the Humes, it can do for your clients. Hundreds of users in all parts of the country have testified to the amazing performance of Moduflow.

As you know, Moduflow is Honeywell's newest contribution to automatic heating. Instead of intermittent delivery of heat, Moduflow delivers an uninterrupted flow of heat to all rooms, at exactly the correct temperature to satisfy the room thermostat and in the exact quantity to offset heat loss.

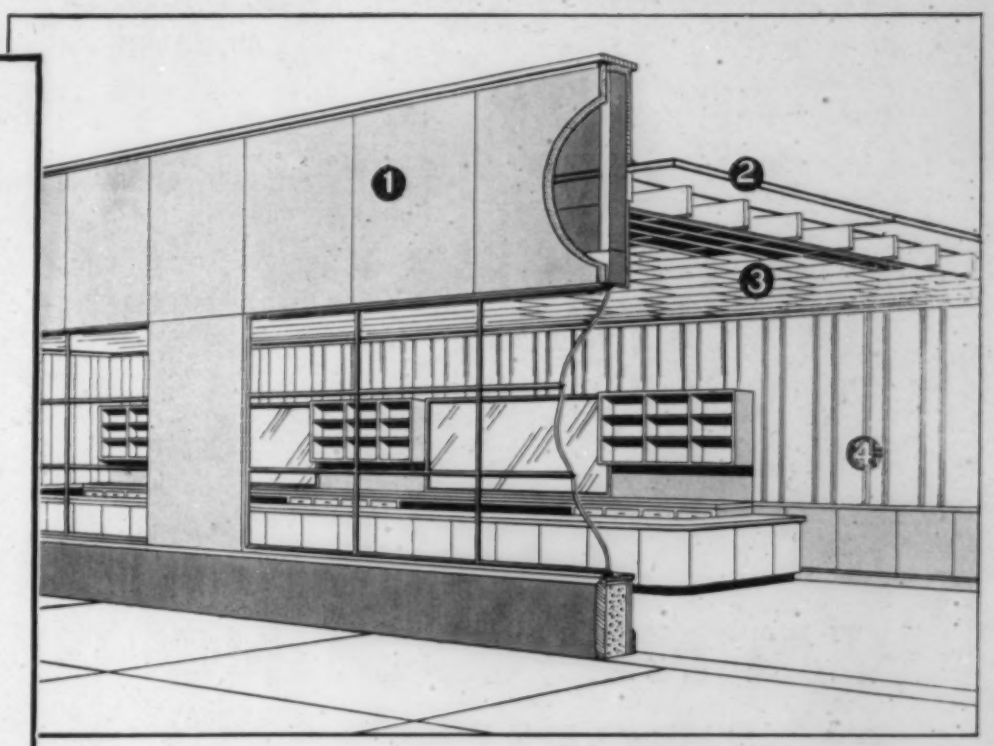
Capitalize on the acceptance and national advertising of Moduflow, and specify Moduflow on every job. Remember, too, Moduflow enhances the value of every home, while an unsatisfactory heating system means a dissatisfied client. Minneapolis-Honeywell Regulator Co., 2804 Fourth Ave. South, Minneapolis 8, Minn.

MINNEAPOLIS
Honeywell
CONTROL SYSTEMS

For MODERN Commercial Construction

Specify the Leader...

CELOTEX BUILDING PRODUCTS



1 CEMESTO WALL UNITS

can be used with wood or steel construction. Simplification of framing, fire-and-moisture resistance – plus versatility – are major advantages of Cemesto. Made with core of Celotex rigid cane fibre insulation, sheathed on both sides with 1/8" layer of asbestos cement bonded to core with bituminous asphalt adhesive. Sizes: 4' wide panels, 4', 6', 8' 10' or 12' long, in thicknesses of 1 1/8", 1-9/16" and 2".

2 CELO-ROK ROOF SLABS

provide strong roof decks that save time and lumber—offer excellent bonding surface for built-up roofing materials. Inside surface has good light reflection value – can be painted if desired. Celo-Rok Roof slabs are laminated 1/2" sheets of fireproof gypsum wallboard – 1", 1 1/2" and 2" thick. Width: 2 ft. Lengths 8, 9, and 10 ft. All thicknesses available with long edges shiplapped. 1 1/2" roof slabs also furnished with long edges T&G.

3 CELOTEX INSULATING TILE BOARD

–a predecorated insulating interior finish material with concealed nailing joints for ceilings and walls. Applied to correctly spaced framing or furring in new construction, or directly over sound old plaster in remodeling, this tile board provides beauty and insulation in one application, at one low cost. Sizes: 12" x 12", 16" x 16", 16" x 32" in half-inch thickness.

4 CELOTEX INSULATING FINISH PLANK

combines decorating and insulating values in a structural interior finish material for ceiling and walls. Many interesting effects can be had by using either regular or random widths. May be applied to properly spaced open framing or furring. Bevelled interlocking joint on long edges only. Sizes: 8', 10', 12' long – 8", 12", 16" wide. Half-inch thick. Type "Double A" Joint.

WHEN YOU say, "I recommend Celotex,"... you're talking your clients' language. They know the name... they know the line... they know its reputation for quality. They *accept* it with confidence!

And this product-confidence builds *client*-confidence in *you!*

Twenty years of effective national advertising – plus more than twenty years of use – have established ready-acceptance for Celotex.

That's why—for *modern* commercial construction—it will pay you to specify Celotex Building Products. Such products, for example, as Celotex Finish Plank – Celotex Tile Board – Cemesto Wall Units for exterior construction – and Celo-Rok Roof Slabs for deck construction.

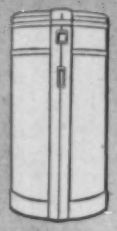
Under this one famous name you enjoy the advantages of *centralized responsibility* – proved products *made* and *sold* by the same manufacturer. It's your guarantee of consistently high quality in *every* Celotex product you specify.

At Your Service—
Celotex Service Engineers!

Without obligation, one of these specialists will meet with you, review your designs, suggest time- and money-saving methods for installing Celotex Building Products. Write: *The Celotex Corporation, Dept. AR-1245, Chicago 3, Illinois.*

CELOTEX
REG. U.S. PAT. OFF.
BUILDING PRODUCTS

THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS

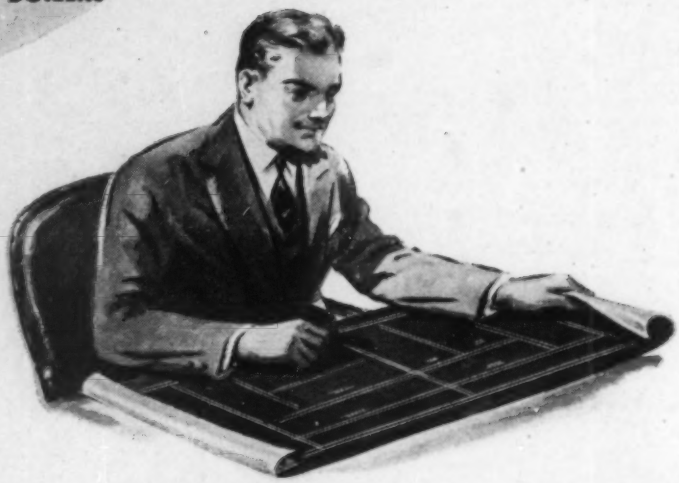


OIL-FIRED BOILERS

GAS-FIRED BOILERS

GAS-FIRED WARM AIR CONDITIONERS

OIL-FIRED WARM AIR CONDITIONERS



CONVERSION OIL BURNERS

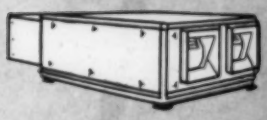
ROOM COOLERS

HEATING–COOLING PROBLEM?

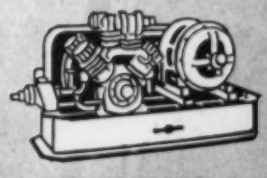
TURN TO

TO BE SURE!

To heat or cool a home—to cool a skyscraper, get the facts on the complete G-E line before you specify heating or air conditioning. G. E. offers the dependable equipment for the job. Back of this equipment, ready to assist in layout and installation, is a vast fund of technical know-how. And a reputation that assures you and your clients of successful performance. See your G-E Distributor. He's listed in the Classified Telephone Directory for your convenience. *General Electric Company, Air Conditioning Department, Section* 54412, *Bloomfield, New Jersey.*



CENTRAL PLANT AIR CONDITIONERS



CONDENSING UNITS

BUY . . . and hold . . . VICTORY BONDS

AUTOMATIC HEATING AND COOLING
AIR CONDITIONING AND COMMERCIAL REFRIGERATION

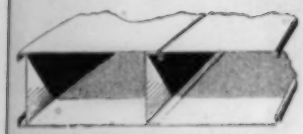
GENERAL ELECTRIC

NOW SHIPPING

Fenestra Building Panels

—Interlocking steel sections for roofs, walls, floors and partitions. They speed construction—save field labor. Versatility permits great flexibility of building design. Channels provide raceways for service facilities. Surfaces are ready for application of finish treatments of your choice: concrete, wood, carpeting, paint, etc.

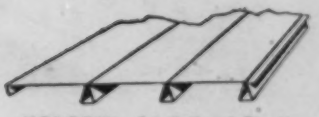
FOUR TYPES



TYPE A. Two channels with top and bottom plate which, with service cover, form two-cell box beams.

TYPE B. One flat surface, two channel-type ribs. Flat side up or down, inside or outside.

TYPE C. Horizontally or vertically, for walls. Normally filled with insulation at the factory.



HOLORIB. Steel Roof Deck with triangular-shape ribs 6" on centers, 1½" deep, for spans to 8 feet.

Standard width of Type A, B and C Panels, 16", in No. 20 to No. 10 gages. Holorib 18" wide in No. 20 and No. 18 gages.

Here's your opportunity to cash in on the tremendous market!

AND MANY OTHER TYPES OF BUILDINGS

Fenestra BUILDING PANELS FOR ROOFS WALLS FLOORS

DETROIT STEEL PRODUCTS COMPANY,
Building Panels Division (*formerly Holorib Div.*)
Dept. AR-12, 2267 E. Grand Boulevard,
Detroit 11, Michigan

Please send me, without obligation, information on Fenestra Building Panels.

Name_____

Company_____

Address_____

"The Seats Of The Happy Immortals"

(*Andromeda:* by Charles Kingsley)

We'll skip the Happy Immortals, not being too familiar with the subject. But the matter of seats is one about which we *do* feel qualified to say a few words.

We're referring, of course, to CHURCH *Sheet Covered* SEATS. In white or color, plain or pearl finish, they set a new high in bathroom attractiveness for the home of today. Their beauty is the rugged type. Furthermore, because it's beauty is built-in . . . by compositing heavy Pyroxylin sheeting on a seasoned hardwood core . . . it provides a finish that will *last*, without chipping, cracking or wearing through.

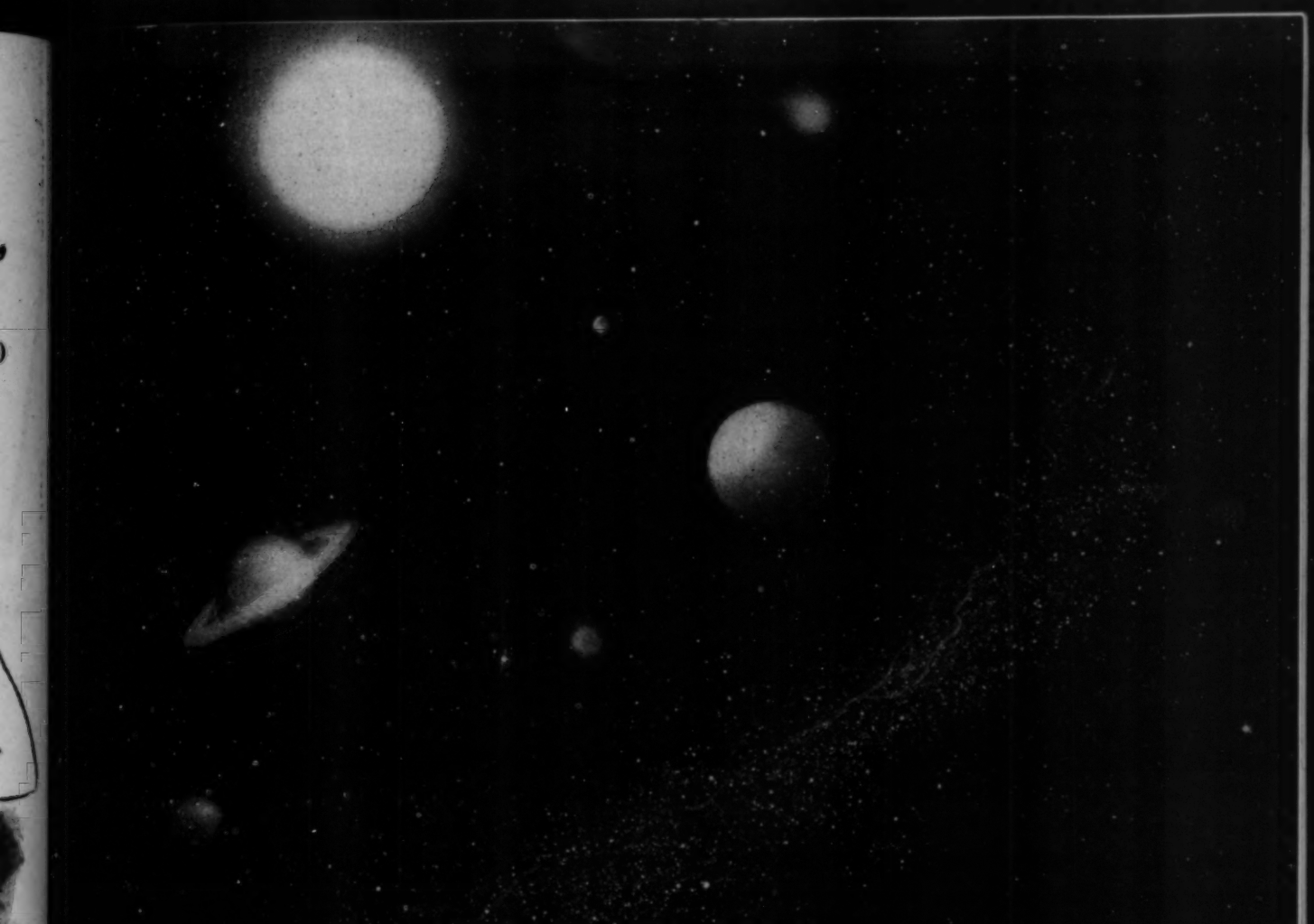
Your clients, those happy mortals, will be all the happier for the beauty, permanence and economy you bring to their remodelling or new home plans. Make sure they get these enduring qualities by specifying CHURCH *Sheet Covered*.

CHURCH SEATS

"THE BEST SEAT IN THE HOUSE"

C. F. CHURCH MFG. CO. • HOLYOKE, MASS.

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION



They all REVOLVE

. . . the warmth-giving Sun . . . the life-producing Earth . . . the energizing Atom!

Like the sun, the earth, the atom, the Wing Unit Heater REVOLVES. It keeps the heated air in gentle motion, slowly circulating a constant, uniform, EVEN temperature, transforming hot and cold spots into comfortable, energizing, productive areas. The circulating heated air from the slowly revolving discharges reaches to farthermost corners, gets around and under obstructions, eliminates hot spots and cold spots.

Install Wing Revolving Unit Heaters now. Not only will they heat your plant comfortably and evenly, bringing a sensation of fresh, live, invigorating warmth to workers, but in the Summer, with the steam turned off and the fans on, they create a pleasant, cooling air motion over the entire area.

Write for Bulletin HR

L. J. Wing Mfg. Co. 154 W. 14th St. · New York 11, N. Y.

Factories: Newark, N. J. and Montreal, Canada

Wing

REVOLVING UNIT HEATERS

TURBINE BLOWERS · TURBINES · MOTOR DRIVEN BLOWERS · VENTILATING FANS · DUCT FANS · HEATING UNITS · SHIP VENTILATORS

MICHAELS

"Time-Tight"

EXHIBIT CASES

COMBINE STYLE, DISTINCTION AND UTILITY!

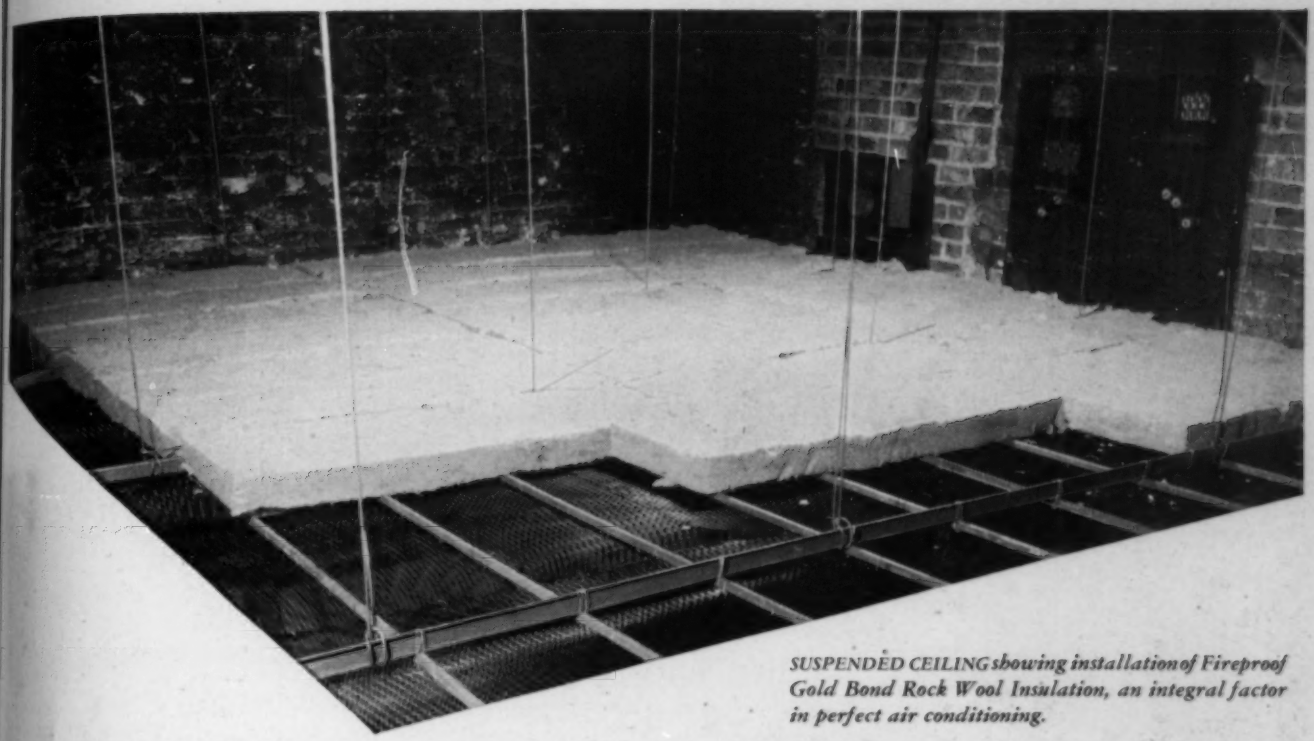
The Military Museum in the State Archives and History Building, Montgomery, Alabama, is illustrated above. This picture shows various types of Michaels Time-Tight Cases with exclusive Innerlocking frames. There are Table, Wall, Aisle, Suspended, Recessed Cases and custom-built cases for special uses. Michaels Time-Tight Cases not only combine style and distinction, but display exhibits to the best advantage. Literature containing complete specifications will be sent on request.

MUSEUM CASE DIVISION OF

THE MICHAELS ART BRONZE CO., Inc.

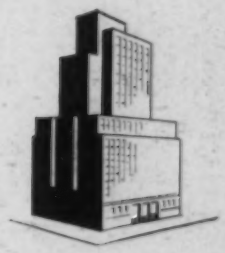
Manufacturers since 1870 of many products in Bronze, Aluminum and other Metals

COVINGTON, KENTUCKY



SUSPENDED CEILING showing installation of Fireproof Gold Bond Rock Wool Insulation, an integral factor in perfect air conditioning.

HAND IN HAND WITH AIR CONDITIONING

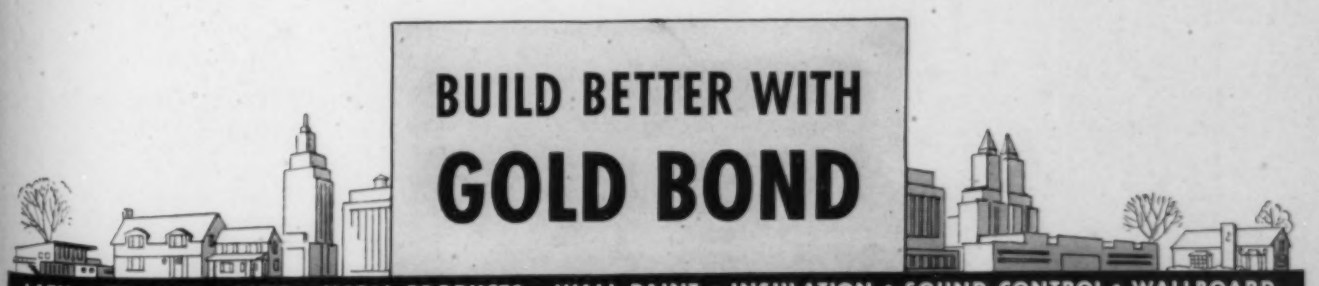


ARE you designing theatres, apartment houses, churches, schools or stores these days? Far-sighted architects realize that scientific air conditioning is essential to all modern building. Most of them realize, too, that hand in hand with air conditioning goes an efficient, economical insulation like Gold Bond Rock Wool!

That's why you'll be doing a service for your client and also your builder when you *specify* Gold Bond Rock Wool insulation in your plans. It substantially reduces the cost of year-round air conditioning and in many cases allows the use of much smaller equipment to do the job.

Gold Bond Rock Wool efficiently keeps out heat in summer and cold in winter. It is absolutely fireproof—an all-mineral product that is also moisture-proofed, permanent and sanitary.

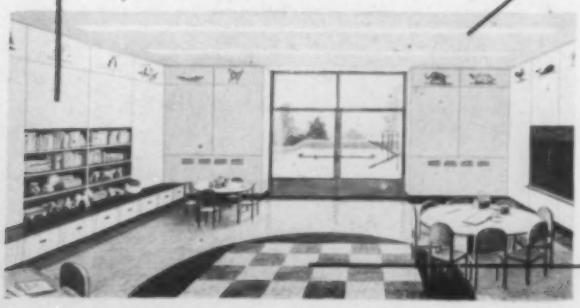
Remember, too, Gold Bond Rock Wool is only one of more than 150 guaranteed Gold Bond products for better building. You'll find the full line described in our section in Sweet's. National Gypsum Company, Buffalo 2, New York.



Johns-Manville Unit System provides complete interior—

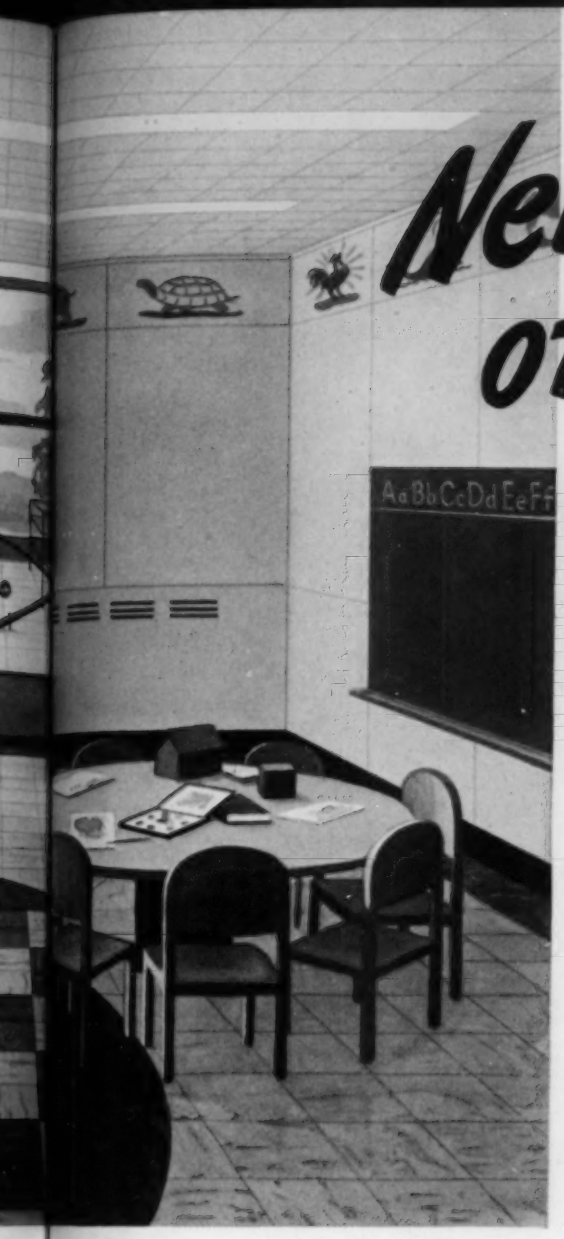
Walls · Ceilings · Floors

1 **MOVABLE WALLS**—The keystone of flexibility in Unit Construction is the J-M Transite Wall. It can be disassembled and relocated as educational needs require. One-unit rooms, for instance, can be speedily converted into two-unit rooms, or vice versa. Made of fireproof asbestos and cement, practically indestructible materials, the movable panels are used to form rigid, double-faced partitions, 4″ thick. They can also be used as the interior finish of the outside walls. The Transite base is easily removable for access to wiring, etc.



2 **ACOUSTICAL CEILINGS**—Important factor in helping to overcome the handicap of distracting noise, Johns-Manville Acoustical Ceilings are beneficial both to teacher and student alike. They give the desired degree of quiet for effective teaching, eliminate frequent causes of nervousness, and are proved aids to concentration. An exclusive Johns-Manville patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical ceiling units, which are readily demountable.

3 **COLORFUL, RESILIENT FLOORS**—J-M Asphalt Tile Flooring completes the Unit Construction System. Made of asbestos and asphalt, the units will withstand the kind of hard wear and abuse that must be expected in any school building. Not only durable, J-M Asphalt Tile Floors are pleasantly comfortable and quiet underfoot, thereby reducing the disturbing effects of noisy footsteps in corridors, gymnasiums, etc. Individual units permit easy alterations or extension of patterns. Made in a wide variety of plain and marbleized colors.



A kindergarten now, it may be a vocational room tomorrow—expanded or rearranged to meet a new need! That's the structural flexibility made possible by the Johns-Manville Unit System.

New Method of Classroom Construction

OFFERS FLEXIBILITY TO MEET EVER-CHANGING EDUCATIONAL NEEDS

Johns-Manville Unit Construction opens a practical, money-saving way to expand, convert, or subdivide schoolroom units

GIVE the school you are planning *complete flexibility* throughout the entire interior . . . plus all the qualities of *permanent* and *solid* construction!

You can easily do this with Johns-Manville Unit Construction . . . provide rooms that are durable and attractive, yet easy to make smaller or larger, easy to move or rearrange, according to the unpredictable and ever-changing educational needs of a community.

Furthermore, you can have J-M Unit Construction throughout the whole interior—Walls, Ceilings, Floors—under *one* specification, *one* manufacturer's responsibility.

Here are the three elements that make the system possible:

1. **Movable Walls** . . . quickly erected or dismantled; 100% salvageable; made of asbestos-cement Transite panels, hard to mar, highly resistant to shock and abuse.
2. **Acoustical Ceilings** . . . reduce distracting noise, increase classroom efficiency. Demountable units can be taken down and relocated as desired.
3. **Colorful, Resilient Floors** . . . quiet underfoot; easy to clean; stand up under heavy traffic. Small units permit easy extension.

The successful use of J-M Unit Construction in other fields has demonstrated its unique advantages for schoolroom construction.

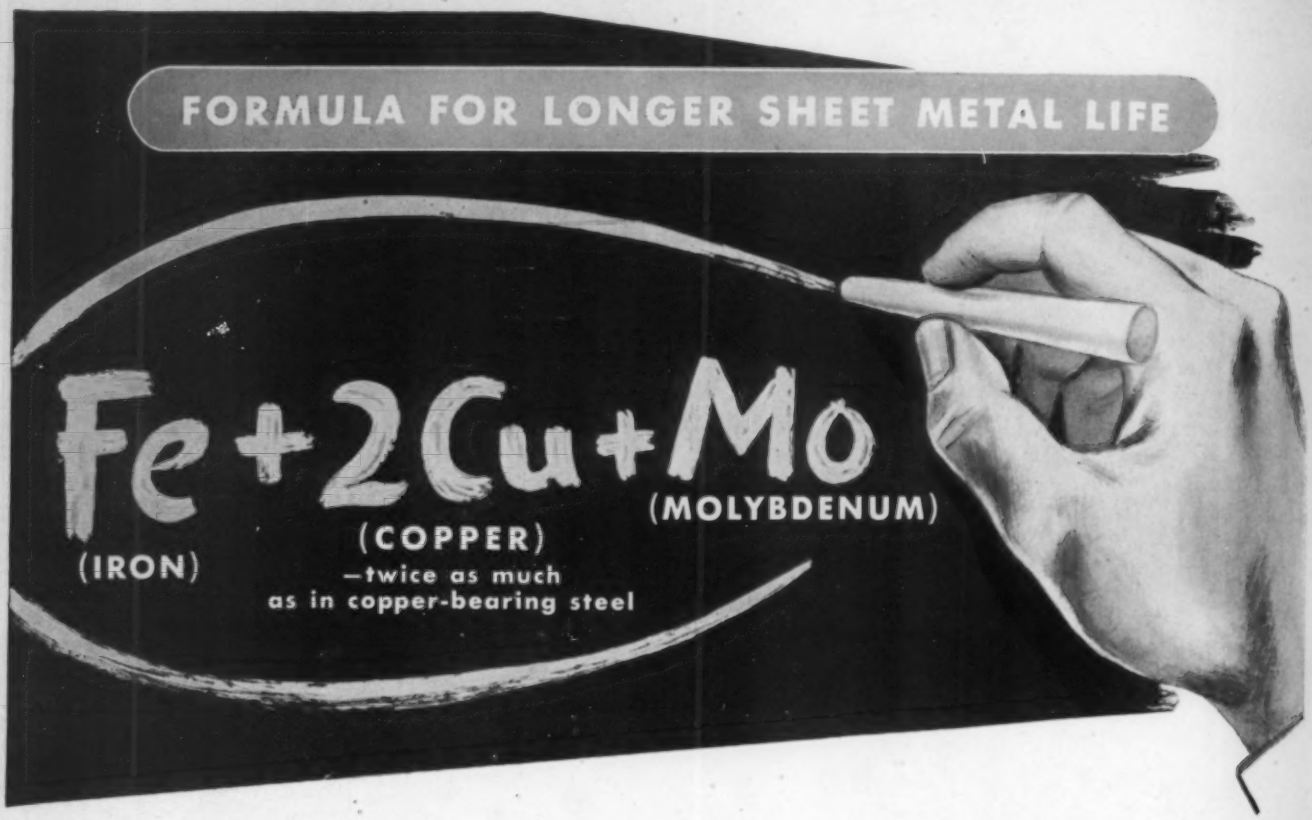
Before building a new school or converting an old one, write for the complete details of this important development. Johns-Manville, 22 E. 40th St., New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville Unit Construction

for entire *School* interior

WALLS • CEILINGS • FLOORS combining Permanence with Flexibility



Only Toncan Iron has All Three

to provide the Highest Rust-Resistance of All Ferrous Materials in its Price Class

There's *no* other material like Toncan Iron. It isn't a steel. It is *not only* an iron—but an *alloyed* iron. That's why it has the highest rust-resistance of all ferrous materials in its price class.

Toncan is made from highly refined open-hearth iron. To this iron is alloyed copper—*twice as much* as found in copper-bearing steel—*and* molybdenum to make the copper impart its highest rust-resistance.

In Toncan Iron, rust-resistance is not only a surface quality, it goes *all through the metal,* uniformly. And its effectiveness is not reduced by any type of fabrication.

Another outstanding quality of Toncan Iron for more than 35 years is its *high ductility.* Because it's made from commercially-pure iron and specially processed for working qualities, it is easy to fabricate by *any* method.

Other conclusive data about Toncan Iron and its many specific applications can be found in Booklet No. 406, "A Few Facts about Toncan Iron for Architects and Engineers." Write for it.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Bldg., New York 17, N.Y.

SEE SWEET'S FILE
or write us for detailed information on these Republic Building Products

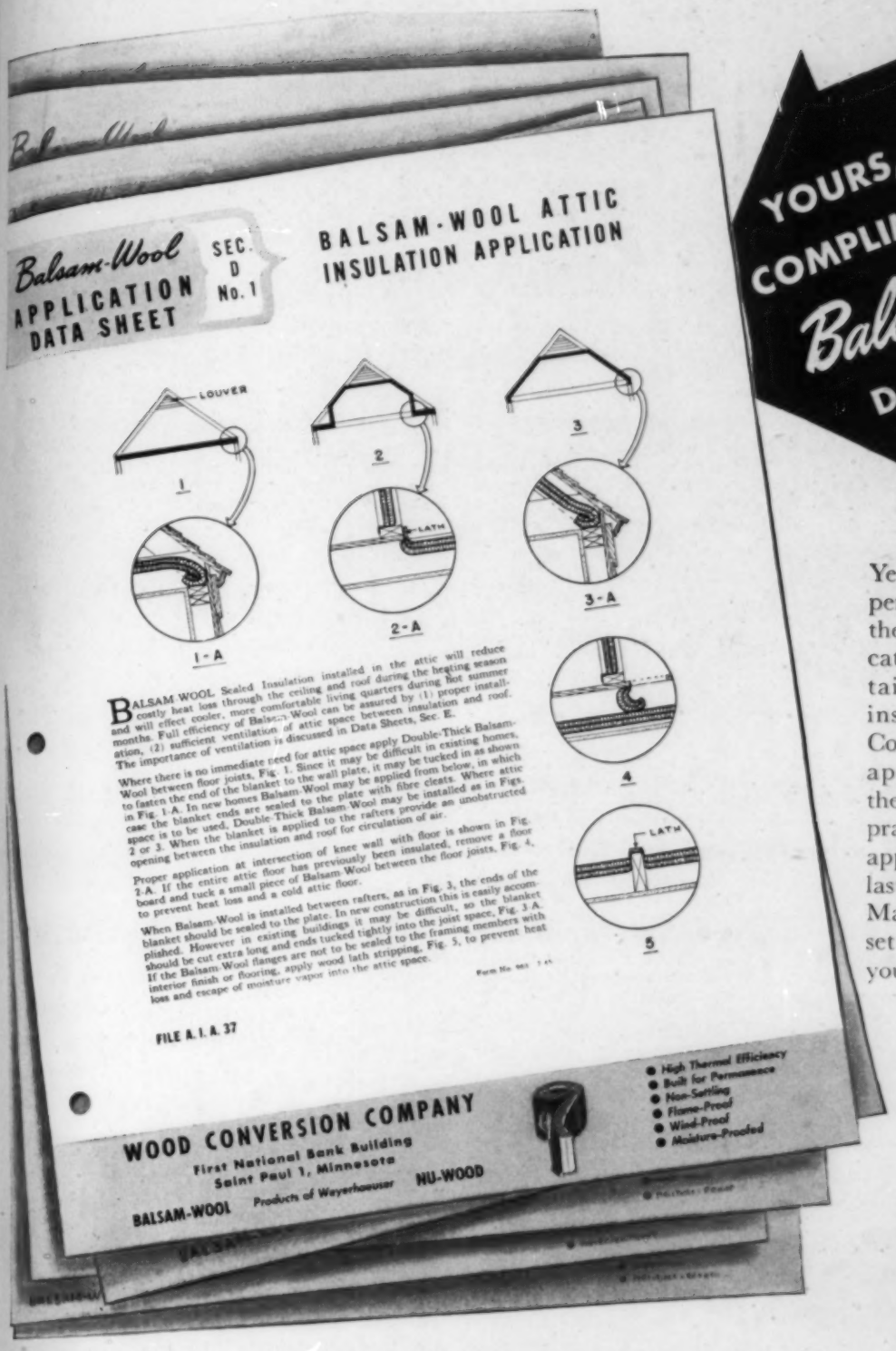
Pipe—Sheets—Roofing
Enduro Stainless Steel
Toncan Enameling Iron
Electrunite E.M.T.
Fretz-Moon Rigid Steel Conduit
Taylor Roofing Ternes
Berger Lockers, Bins, Shelving, Kitchen Cabinets
Truscon Steel Windows, Doors, Joists
and other building products

Republic

TONCAN COPPER MOLYBDENUM IRON

Reg. U. S. Pat. Off.

—for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods, and other sheet metal applications requiring rust-resistance.


Balsam-Wool
APPLICATION DATA SHEET
SEC. D No. 1
BALSAM-WOOL ATTIC INSULATION APPLICATION
LOUVER
1
2
3
LATH
1-A
2-A
3-A
4
5
LATH
BALSAM WOOL Sealed Insulation installed in the attic will reduce costly heat loss through the ceiling and roof during the heating season and will effect cooler, more comfortable living quarters during hot summer months. Full efficiency of Balsam-Wool can be assured by (1) proper installation, (2) sufficient ventilation of attic space between insulation and roof. The importance of ventilation is discussed in Data Sheets, Sec. E.
Where there is no immediate need for attic space apply Double-Thick Balsam-Wool between floor joists, Fig. 1. Since it may be difficult in existing homes, to fasten the end of the blanket to the wall plate, it may be tucked in as shown in Fig. 1-A. In new homes Balsam-Wool may be applied from below, in which case the blanket ends are sealed to the plate with fibre cleats. Where attic space is to be used, Double-Thick Balsam-Wool may be installed as in Figs. 2 or 3. When the blanket is applied to the rafters provide an unobstructed opening between the insulation and roof for circulation of air.
Proper application at intersection of knee wall with floor is shown in Fig. 2-A. If the entire attic floor has previously been insulated, remove a floor board and tuck a small piece of Balsam-Wool between the floor joists, Fig. 4, to prevent heat loss and a cold attic floor.
When Balsam-Wool is installed between rafters, as in Fig. 3, the ends of the blanket should be sealed to the plate. In new construction this is easily accomplished. However in existing buildings it may be difficult, so the blanket should be cut extra long and ends tucked tightly into the joist space, Fig. 3-A. If the Balsam-Wool flanges are not to be sealed to the framing members with interior finish or flooring, apply wood lath stripping, Fig. 5, to prevent heat loss and escape of moisture vapor into the attic space.
FILE A. I. A. 37
WOOD CONVERSION COMPANY
First National Bank Building
Saint Paul 1, Minnesota
BALSAM-WOOL Products of Weyerhaeuser NU-WOOD
High Thermal Efficiency
Built for Permanence
Non-Settling
Flame-Proof
Wind-Proof
Moisture-Proofed

YOURS, WITH OUR COMPLIMENTS, THESE *Balsam-Wool* DATA SHEETS

Years of research and experience are embodied in these Balsam-Wool Application Data Sheets, containing latest data on insulation application. Covering a wide range of application problems, these sheets assure the best practice in many types of application—help create lasting owner satisfaction. Mail the coupon now for set of data sheets—they're yours for the asking!

Balsam-Wool

SEALED INSULATION

1. WINDPROOF
2. MOISTURE-PROOFED
3. FIRE RESISTANT
4. LASTING
5. NON-SETTLING
6. HIGHLY EFFICIENT

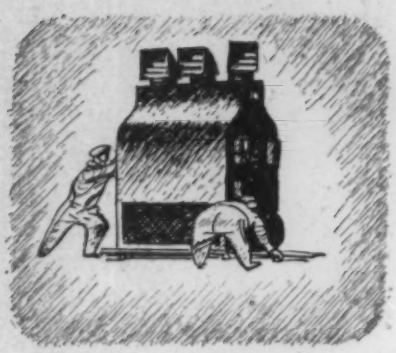
BALSAM-WOOL • NU-WOOD
Products of Weyerhaeuser

WOOD CONVERSION COMPANY
Dept. 115-12 First National Bank Bldg.
St. Paul 1, Minnesota

Gentlemen:
Please send me set of application data sheets.

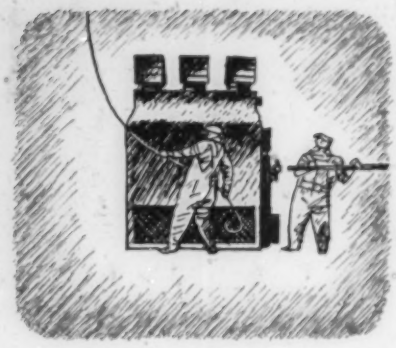
Name ..... *Address* ..... *City* ..... *State* .....

a heating system should:



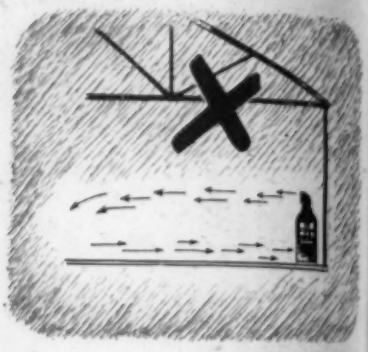
be easy to install

Dravo direct fired warm air heaters are shipped from the factory with the refractory lining in place, the unit complete—ready to produce heat. Installation is a clean job, quickly accomplished.



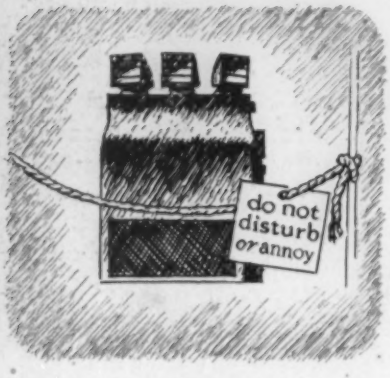
easy to connect

Where either gas or oil is the fuel to be used the heaters require only to be connected with the fuel pipe and to the power line. Heat can be on tap just a few hours after the heater is moved in.



heat directionally

Top discharge—bottom intake tends to arrest the normal upward flow of warm air, keep the heat in the working area, where it belongs, and not in the roof trusses.

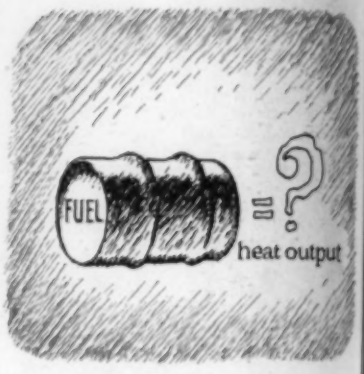


be self sufficient

Gas or oil fired models are practically automatic, require no regular maintenance. Once the ignition button is pressed thermostatic controls do the rest. Any employee can regulate.

give pleasant heat

Dravo direct fired warm air heaters are easy to regulate for volume and direction so that workmen can enjoy clean, comfortable heat and even temperature throughout the season.

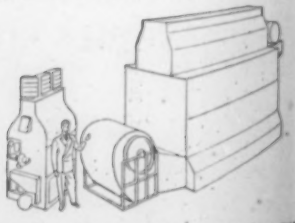


be +80% efficient

Conditions vary with each building but Dravo direct fired heaters for gas or oil have constantly shown between 80-85% efficiency in test results—more BTUs from the same amount of fuel.

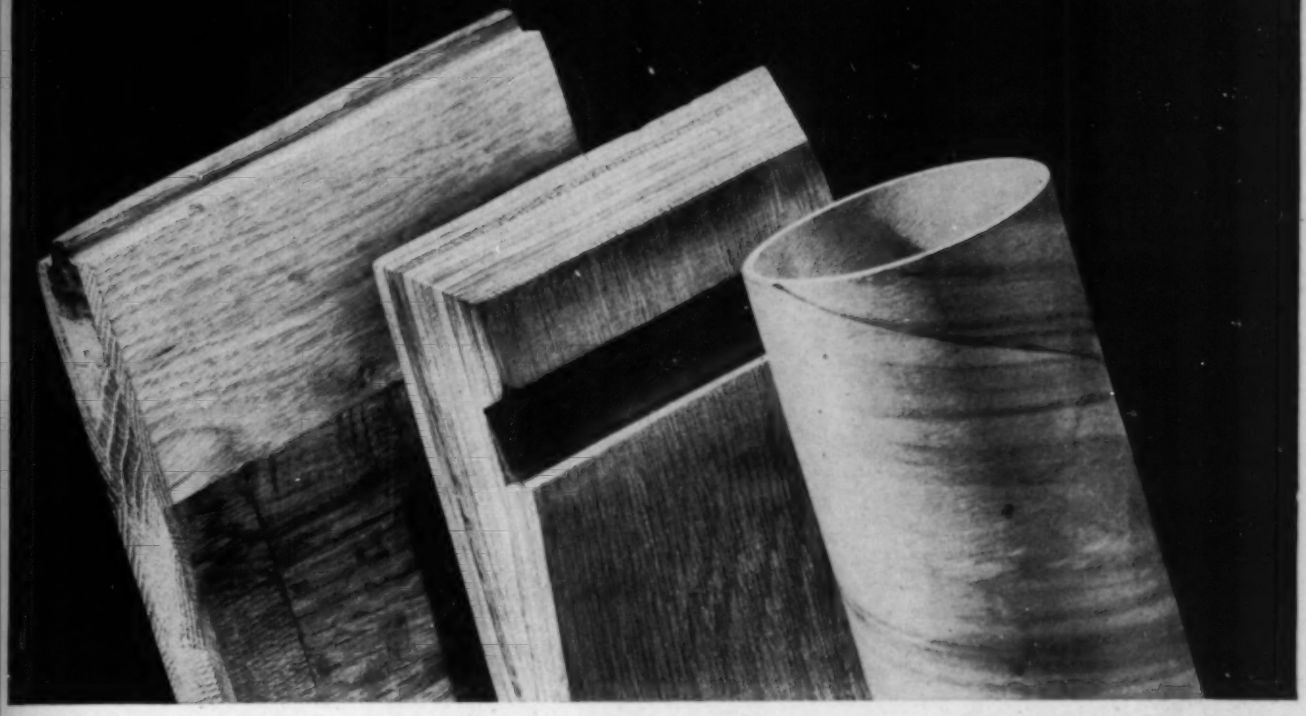
The advantages pictured above are inherent to direct fired warm air heating and are available for any building where this type of heat is applicable. They can function as independent portable units; they can be installed in out-of-the way plant areas to provide supplementary heat; they can be hung from the walls when floor space is not available; they can be moved from place to place during building construction and be retained as permanent heating systems afterward. Air cooling and cleaning can be arranged in conjunction with them. Will this method fit any building you have to heat? Our Building Survey Report will help organize the data we need to suggest a layout and quote a price. Write for a copy—address Dravo Corporation, Heater Department, 300 Penn Avenue, Pittsburgh 22, Pa.

DRAVO
HEATING



300,000 TO 4,000,000 B.T.U. CAPACITY PLUS UNITS COMBINE FOR ANY DESIRED OUTPUT

An old material—in new forms—solving new problems



1. **Laminated oak flooring. Utilizing clear wood on face, lower grades in core. Made at low cost on continuous gluing machines. Waterproof, heatproof, moldproof glue line.**
2. **Laminated wood barrel stave. Molded to compound curve. Durable, splitproof. Withstands steam-cleaning, rough handling. Waterproof, heatproof, moldproof glue line.**
3. **Plywood tube. Light, strong. Adaptable to masts, supporting members, containers, piping. Waterproof, heatproof, moldproof glue line.**

IF YOU have always looked at wood as something that splits and warps—look again!

Gluing "thin ones into thick ones" changes wood's physical characteristics. The grain patterns of no two plies of wood are alike. When the plies are glue-laminated, the grain crosses, and each ply holds its neighbor from splitting and warping. Each ply reinforces the other.

Modern durable glues make such constructions practical by holding the plies together with a permanent bond that withstands every hazard to which the construction may be subjected.

If you have a problem in translating Ideas into Wood, call on us. Our direct experience with a large cross-section of America's entire wood industry will be of help to you.

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Glues for Industry

CASEIN COMPANY OF AMERICA, Dept. AR-25
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NEW YORK . 350 Madison Avenue, New York 17, N. Y.
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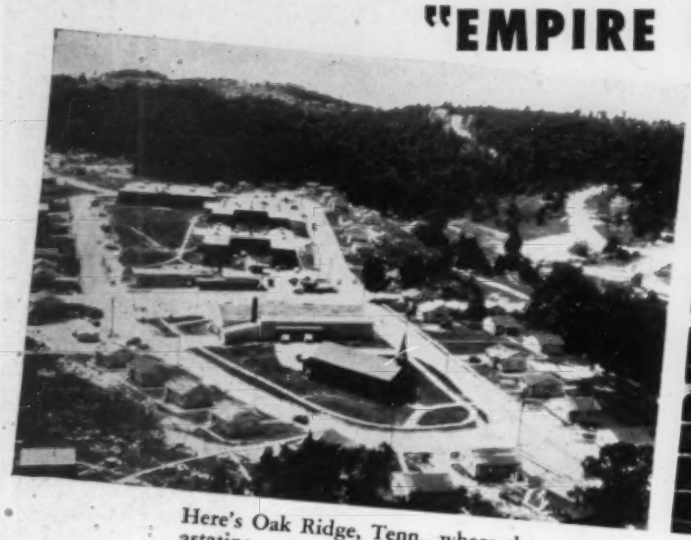
Marlite . . .

SILENT PARTNER IN AN "EMPIRE SHAKING" ENTERPRISE



Here's Oak Ridge, Tenn., where the most devastating war weapon of all time is produced. Hospital, with nurses home and out-patients

PHOTO PRESS ASSOCIATION, INC.

building, required 110,100 square feet of Marlite paneling. Homes, such as those shown in left drawing called for 607,652 square feet of Marlite.

876,326 Square Feet of Plastic-Finished Marlite Installed at Tennessee Site of ATOMIC BOMB Development

Perfection of the Victory-clinching Atomic Bomb required speed . . . *all along the line!* Vitally important was the rapidity with which the Oak Ridge site of the Clinton Engineer Works became a completed city of 75,000 population in little over a year. Homes, hospitals, dormitories, factories, service stations, schools, food stores, laboratories and a recreation hall sprang up. In *every one* Marlite—pre-engineered for fast, easy installations everywhere—plays a dominant part as the surfacing material for interior walls and ceilings . . . proves again how versatile Marlite paneling can be adapted to *all types of rooms in all types of buildings.*

INSTALLATION SPEED, YES, AND ALL THESE QUALITIES, TOO! Long-wearing beauty (there's an unusually wide variety of colors and patterns from which to choose) and ease of cleaning are assured by the pioneer high-heat-bake finish. This exclusive formula assures a surface impervious to attack by dirt, grease, grime, moisture, alkalies and most acid fumes . . . means savings in maintenance time and costs . . . eliminates costly bothersome redecorating.

So, make plastic-finished Marlite your silent but profitwise partner in all your building plans . . . either new construction or remodeling! Marsh Engineers are always ready to help with plans and specifications. And just as rapidly as war-born conditions permit, you'll see a return to Marsh's regular prompt delivery from 27 strategically-located warehousing points.

Marlite

REG. U. S. PAT. OFF.

MARSH WALL PRODUCTS, Inc.

125 MAIN STREET • DOVER, OHIO

duty-ful

PLASTIC-FINISHED WALL PANELS • FOR CREATING BEAUTIFUL INTERIORS

DESIGNED FOR HEALTH – WITH CHLORINATION

More and more home owners are looking forward to swimming pools of their own. Pools which — like the best municipal and commercial pools — offer recreation plus the assured safety of adequate chlorination.

W&T Chlorinators for every type of pool preclude the danger of water borne disease and also help inhibit objectionable algae growths. Yet operation is so simple that the gardener, or caretaker, can adequately supervise the equipment.

So, in planning your postwar pool be sure to specify W&T chlorination equipment.

WALLACE & TIERNAN

COMPANY, INC.

Manufacturers of Chlorine and Ammonia Control Apparatus

NEWARK 1, NEW JERSEY

Represented in Principal Cities

Greater Eye-Appeal... A PLUS VALUE YOU GET WITH STEEL

The building entrance and marquee above show a typical application of U·S·S VITRENAMEL—a special, high quality steel for porcelain enameling. Porcelain enamel can be finished to harmonize architecturally with other decorative and structural materials.

MODERN architecture employs steel decoratively, as well as structurally. Strikingly *artistic* effects can be achieved with the wide range of U·S·S Steel Sheets now available for building purposes.

Long recognized for its long life, great strength, fire-resistance, low upkeep, and ease of installation, steel's decorative possibilities make it a material of almost limitless uses.

Whether you're designing store fronts, interior walls, ceilings, doors, floors, stairways, escalators, counter tops, air conditioning systems, it will be to your advantage to specify U·S·S Steel Sheets. They will make any commercial building smarter in appearance, more efficient and practical, more economical.

Listed at the right are a few of the well-known U·S·S Building Steels. Note how their special properties fit in with your requirements. And, remember, the familiar U·S·S Label, besides covering the widest variety of steel building products, is the most extensively advertised and best-known symbol of quality steel in the entire country.

War-Tested U·S·S Steels for Building

U·S·S STAINLESS AND HEAT-RESISTING STEELS *to provide permanent beauty, assure high resistance to corrosion and heat, and to reduce weight.*

U·S·S VITRENAMEL—*A special, high quality steel base for colorful, permanently beautiful porcelain enamel.*

U·S·S GALVANIZED SHEETS *to provide easy formability, workmanlike appearance and long life.*

U·S·S COPPER STEEL *to give at least twice the atmospheric corrosion resistance of regular steel at little additional cost.*

U·S·S COR-TEN—*A high-strength steel with two to three times the resistance to atmospheric corrosion of Copper Steel.*

U·S·S DUL-KOTE—*A dull-surfaced galvanized sheet and* U·S·S PAINTBOND *—a Bonderized galvanized sheet, both specially prepared for immediate painting and better paint adherence.*

U·S·S STEEL ROOFING AND SIDING *in every wanted form for residential, industrial and farm applications.*

U·S·S STRUCTURAL SECTIONS – *A complete range of sections and sizes to meet every building requirement.*

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CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
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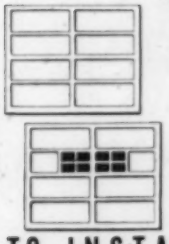
YOU CAN SPECIFY AND INSTALL THE NEW

Craw-Fir-Dor

SELF-ENERGIZING · ONE PIECE · OVERHEAD TYPE

GARAGE DOOR

NOW!



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Beautiful new designs. Profit to standard size.

EASY-TO-INSTALL

Hardware 85% pre-assembled. Can be installed in an hour.

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Requires only 2" of headroom above openings and 2" of sideroom.

NEW AUTO-TYPE LOCK

Smart, durable, easy-acting auto-type lock is exclusive equipment.

STURDY DOUGLAS FIR

Craw-Fir-Dor is strong. Made of durable Douglas fir. Exterior (waterproof) panels

Yes! Craw-Fir-Dor — the low-priced, upward-acting, overhead-type garage door — is available NOW. Better than ever, too, with improved hardware, improved performance, improved appearance. Contact your lumber dealer NOW.

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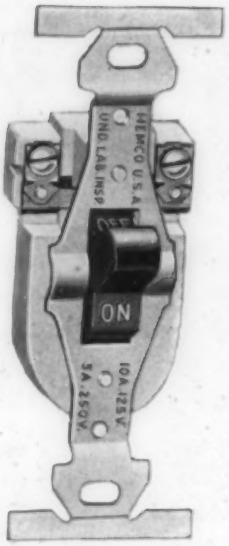
Tacoma 2, Washington

The National Association of Fir Door Manufacturers

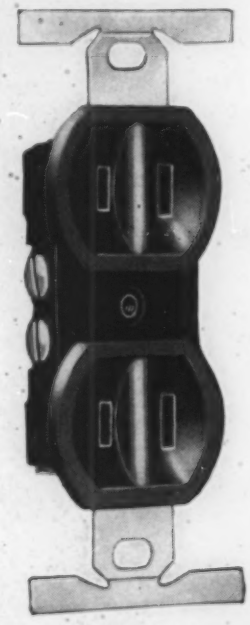
Wide mounting yoke permits correct alignment with wall surface.
Ample screw heads make wiring easy.
Tough porcelain cup.
Strong plastic handle.
Available with brown or ivory handle, Single-Pole or 3-way action. Approved by Underwriters' Laboratories.



BRYANT FLUSH SWITCHES No. 51 and No. 53

Announcing . . .

NEW DESIGNS of POPULAR LINES



Wide mounting yoke permits correct alignment with wall surface.
Ample screw heads make wiring easy.
Finding slots facilitate cap insertion.
Contacts grip cap blades securely.
Strong Bakelite cup.
Available in brown and ivory.
Approved by Underwriters' Laboratories.

CONVENIENCE OUTLET No. 142

BRYANT FLUSH SWITCHES and CONVENIENCE OUTLETS

EASY WIRING AND INSTALLATION

THE BRYANT ELECTRIC COMPANY

SUPERIOR WIRING DEVICES

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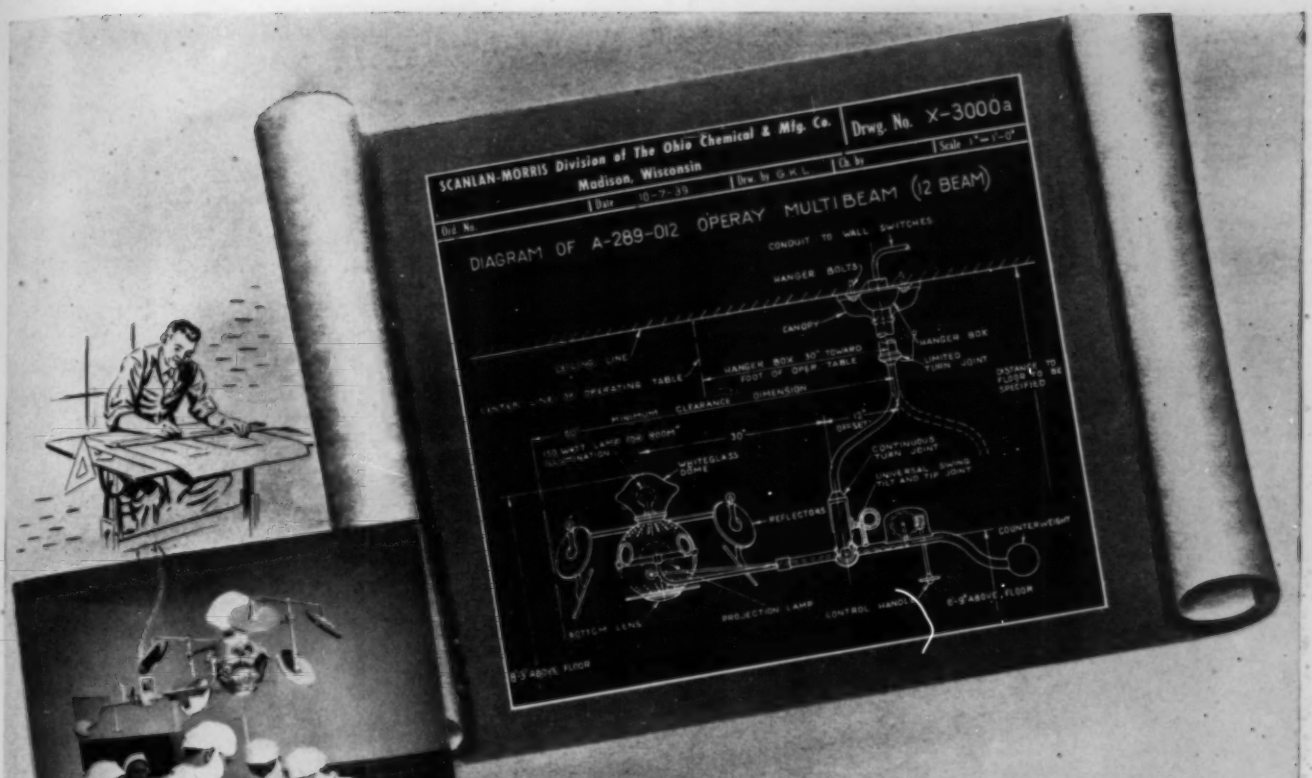
A SUBSIDIARY OF WESTINGHOUSE ELECTRIC CORPORATION

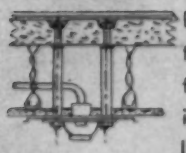
Specify Bryant Devices from your Electrical Wholesaler



Scanlan-Morris

SURGICAL LIGHTING SPECIALISTS

Supply Valuable Assistance to Hospital Architects



Because surgery demands the finest lighting that science can devise, hospital architects find essential the assistance of specialists in surgical lighting when planning the installation of lighting fixtures in operating and delivery rooms.

Scanlan-Morris engineers have devoted many years of intensive study to the developing of lights that provide abundant illumination of the operating field and the depths of surgical cavities. Years of contact with hospital executives, surgeons and architects qualify our Technical Sales Service Department to give valuable and authentic guidance in the important matter of proper surgical lighting.

Operay Multibeam and Surg-O-Ray lighting fixtures, manufactured by the Scanlan-Morris Division, are used in prominent hospitals throughout the world.

Architects are invited to submit list of requirements and to send for illustrated literature containing wiring and installation drawings and other valuable data on:

OPERAY MULTIBEAM
5-Beam and 12-Beam-Plus
Ceiling-Hung Surgical Lights

OPERAY SURG-O-RAY
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Please send me a copy of Scanlan-Morris Catalog of Surgical Lights.

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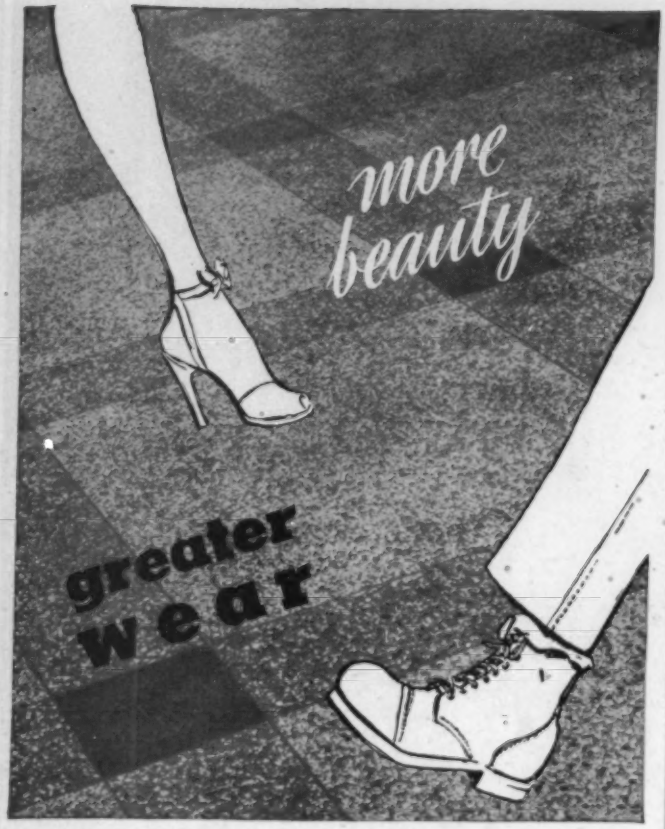

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Cost Less Over the Years

TERRAZZO puts an end to costly floor maintenance and upkeep . . . and creates a colorful appearance to blend with any design and need. Specify TERRAZZO to add distinction and individuality to your building plans. Easy to clean and keep clean . . . natural colors that never fade . . . TERRAZZO is truly the floor of *permanence.*

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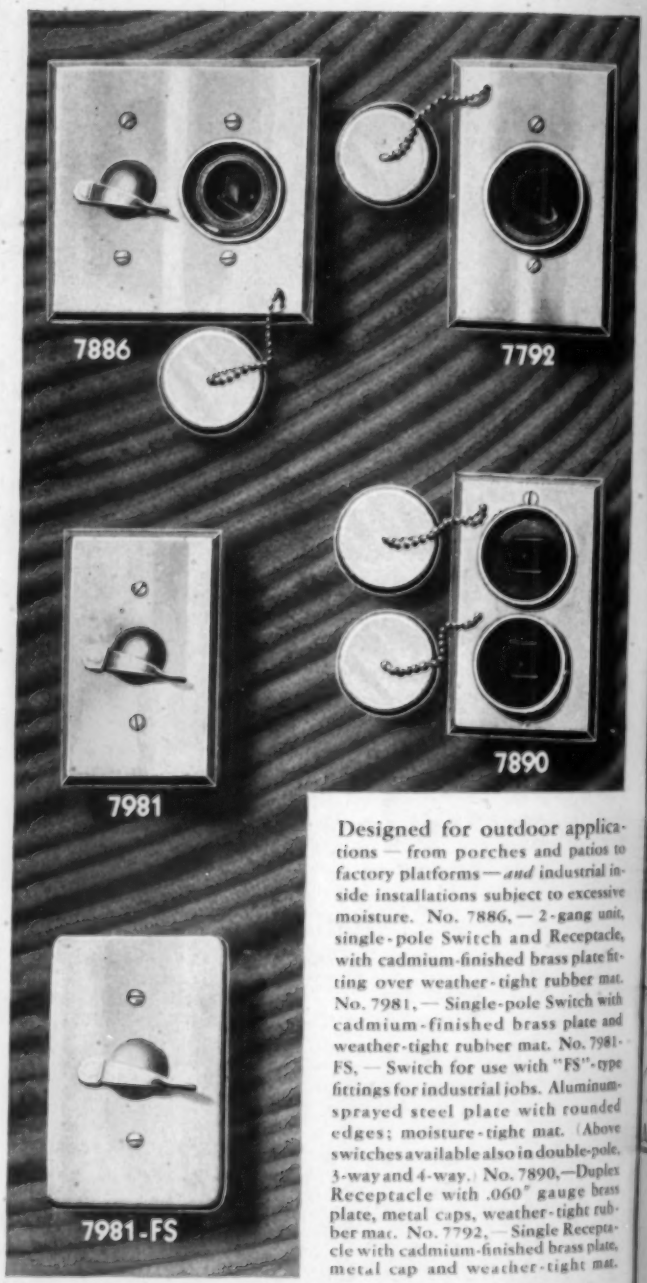
THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, Inc.
1420 New York Ave., N. W., Dept. R, Wash. 5, D. C.

H&H WEATHER-PROOF

OUTDOOR SWITCHES AND RECEPTACLES



Designed for outdoor applications — from porches and patios to factory platforms — *and* industrial inside installations subject to excessive moisture. No. 7886, — 2-gang unit, single-pole Switch and Receptacle, with cadmium-finished brass plate fitting over weather-tight rubber mat. No. 7981, — Single-pole Switch with cadmium-finished brass plate and weather-tight rubber mat. No. 7981-FS, — Switch for use with "FS"-type fittings for industrial jobs. Aluminum-sprayed steel plate with rounded edges; moisture-tight mat. (Above switches available also in double-pole, 3-way and 4-way.) No. 7890,—Duplex Receptacle with .060" gauge brass plate, metal caps, weather-tight rubber mat. No. 7792, — Single Receptacle with cadmium-finished brass plate, metal cap and weather-tight mat.

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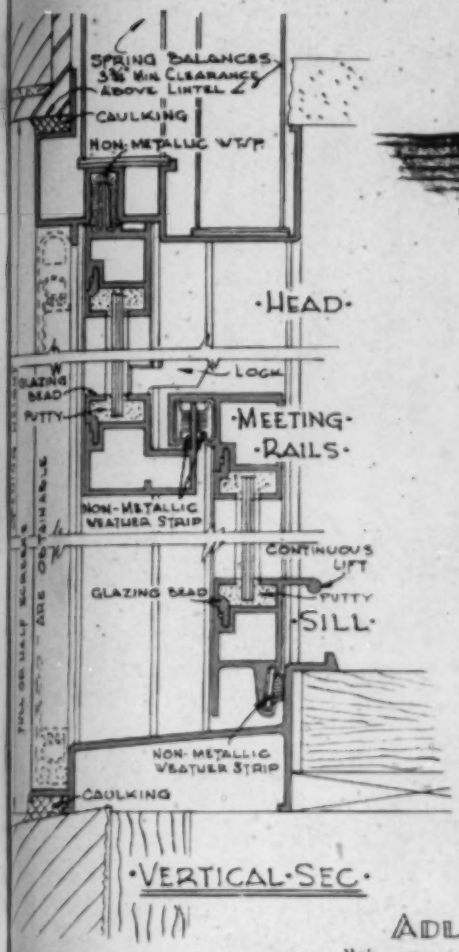
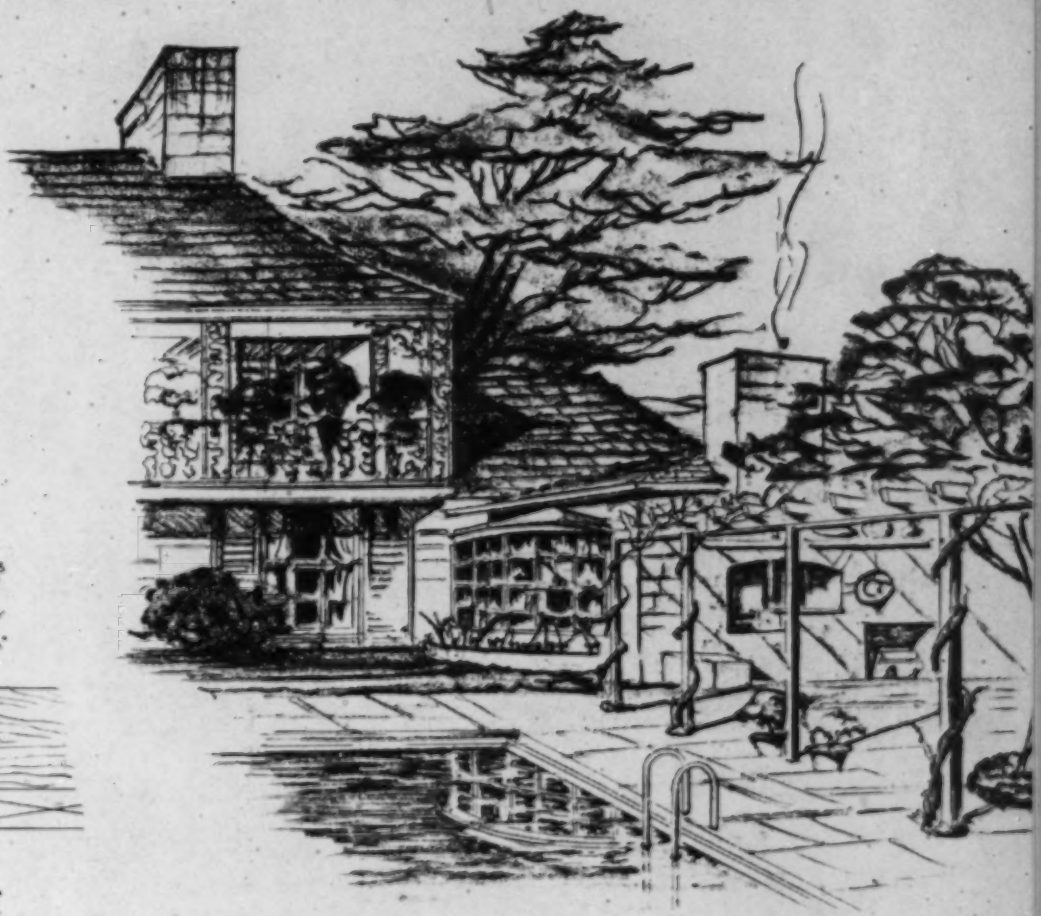
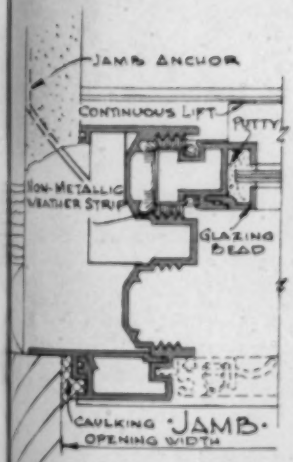
ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD 6, CONN., U.S.A.

·RESIDENTIAL·SERIES·400·WINDOW·







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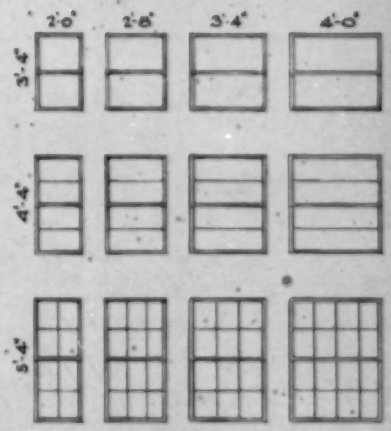
THEIR GLEAMING BEAUTY IS A COMPLIMENT TO THE HOME, PROVIDING MAXIMUM LIGHT AND VENTILATION.... ADLAKE WINDOWS GLIDE SO EASILY ON THEIR NON-METALLIC WEATHER STRIPPING THAT A CHILD CAN OPERATE THEM.

ADLAKE ALUMINUM DOUBLE-HUNG WINDOWS FREE YOU FROM MANY OF THE MAINTENCE WORRIES ENCOUNTERED IN WINDOWS OF OTHER MATERIALS.

PICTURE WINDOWS ARE OBTAINABLE.



·STANDARDS·

MUNTIN ARRANGEMENTS SHOWN ABOVE ARE TYPICAL ONLY. GLASS DIVISIONS ARE OBTAINABLE IN ANY VERTICAL OR HORIZONTAL PATTERN.

SPECIFY AND DETAIL

Adlake

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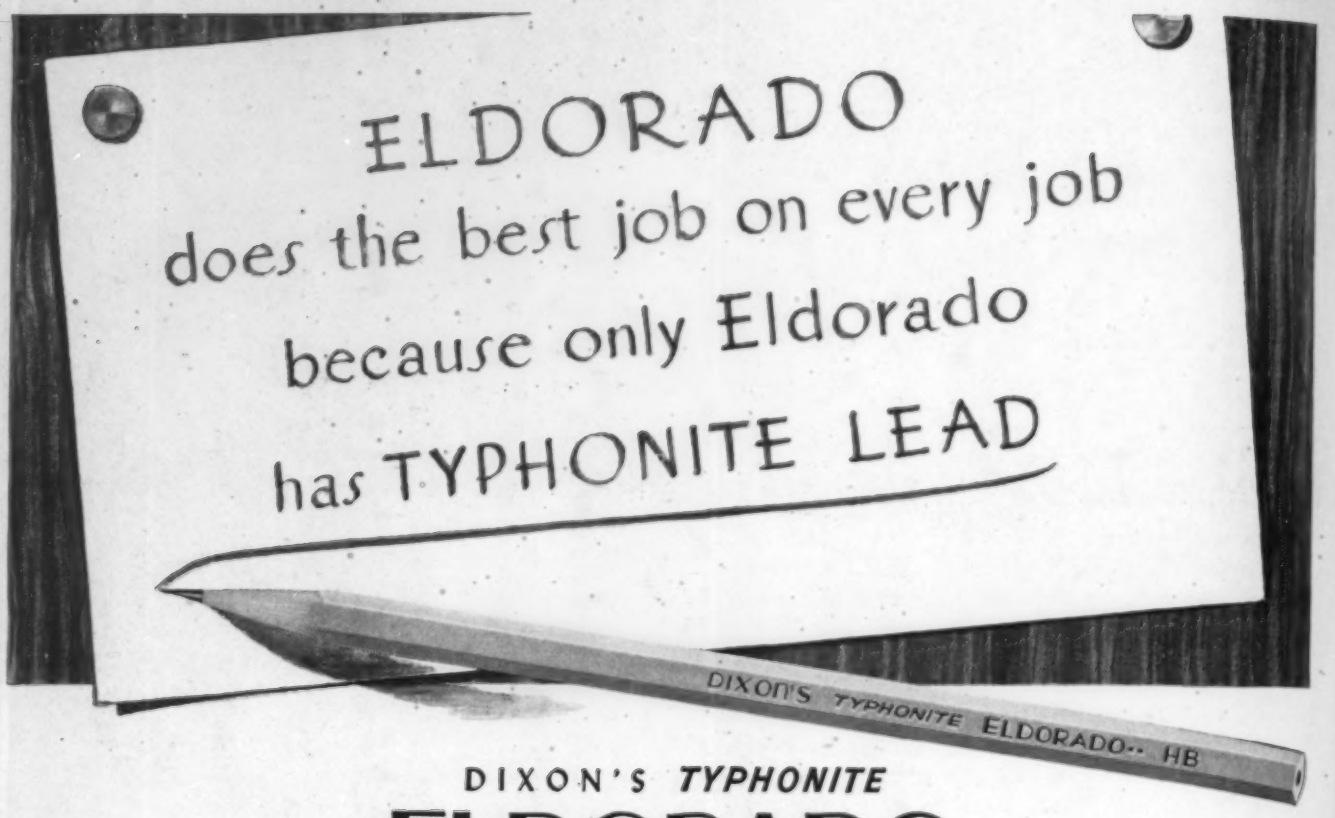
E. ADAMS AND WESTLAKE CO. ELKHART, INDIANA, U.S.A.



DIXON'S *TYPHONITE*

ELDORADO

PENCIL SALES DEPARTMENT 225-J12, JOSEPH DIXON CRUCIBLE CO., JERSEY CITY 3, N. J.

Telephone conduit leading to conveniently located outlets will be essential in post-war homes. Yet the cost of installing such conduit is low, if included while the house is being built or remodeled.

Your telephone company will be glad to help you plan for telephone facilities.

BELL TELEPHONE SYSTEM

DELANY FLUSH VALVE equipped with NO. 50 VACUUM BREAKER, a device that prevents water contamination, telltales back syphonage. DELANY VALVES are noted for their simplicity and freedom from breakdown.

TOMORROW'S PLANNING

There is a bright future coming for community life in America. The pattern is in the weaving, the plans are on the boards, the funds in committees' hands awaiting the return of peace.

The acceptance of the FLUSH VALVE in private homes is but one of the foreshadowing changes now accepted as fact. War building has proved this. The water economy, efficiency of purpose, and freedom from fault and common maintenance of the DELANY FLUSH VALVES, over past accepted methods of domestic sanitation, earns them a place in your plans for modern community improvement.

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BROOKLYN N.Y.

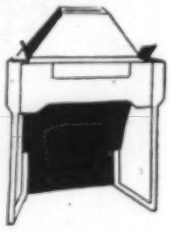
Your creative talent . . .

. . . plus a

BENNETT

Fresh-Aire

FIREPLACE UNIT



. . . assure smokeless results and proud clients

When you design a fireplace to be built around a Bennett *Fresh-Aire* Unit, you have unlimited freedom to detail its outward appearance exactly as you want it. At the same time you assure correct internal construction.

As you know, when burning, a fireplace exhausts more than 200 cu. ft. of air per minute from the living quarters of a house. If tightly constructed, replacement air cannot enter from outdoors in sufficient quantities to supply the chimney draft. Result: Partial vacuum, back-puffs and smoke. If sufficient replacement air can enter, the average temperature of the entire house is lowered, cold drafts sweep the floor and automatic furnace controls are out of balance.

In sharp contrast, the Bennett *Fresh-Aire* Fireplace draws replacement air from outdoors through heating chambers and distributes it into the living quarters warm instead of cold. Result: No smoke, no uneven temperatures, no interference with heat controls and a net gain in evenly distributed warmth.

The benefits of this principle have been well proved in over 20 years experience and are especially important to you—in designing the modern, fully weather-stripped home.

For camps, summer cottages, hunting lodges, and southern homes—the *Bennett Warm-Aire Fireplace Unit* is ideal.

To add beauty and give protection—every fireplace should have a *Bennett Flexscreen*—the safety fireplace curtain.

For complete details
Send today for Bennett Fireplace Catalog—or see Sweet's

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Where WILL THE ARCHITECT CONCENTRATE *in the next decade?*

CONSIDER THE HOSPITAL AND PUBLIC INSTITUTION

with Protective Equipment from H H M

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MORE THAN A CENTURY OF LEADERSHIP IN THE MANUFACTURE OF PROTECTIVE DEVICES FOR INDUSTRY, COMMERCE, AND THE HOME.

★ World War II, in combination with the complexities of modern life, has created a need for hospital and institutional care and service all out of proportion to existing facilities. For the architect, the opportunity is boundless. Naturally, today's hospital and institution must have the ultimate in record protection and metal cabinet equipment. The counsel and cooperation of Herring-Hall-Marvin engineers are available to the architect. Production is immediately available. Consult your nearest H-H-M office or write us direct.

IN PREPARATION: *"Progress in Protection."* An illustrated history of devices men have used to protect their valuables from the cave man era to the present. Limited edition. For architects, bankers, executives. Please reserve (by letter) your copy now. Gratis.

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BUILDERS OF THE UNITED STATES SILVER STORAGE VAULTS—WEST POINT MILITARY RESERVATION

VITREOUS ENAMELING

simplified in production and *reduced* in cost by this

new Titanium Steel

ADVANTAGES

THE use of Titanium steel offers the listed advantages to the Vitreous Enamel Industry. These advantages have been proved in laboratory and plant operation where the recommended practice covering nickel flashing, pickling and enameling has been followed:

1. Elimination of enamel boiling due to steel defects.
2. Elimination of conventional ground coat.
3. Elimination of copper heading.
4. Improved sag resistance.
5. Improved resistance to warping.
6. Excellent deep drawing qualities.
7. Use of conventional cover coats directly on metal.
8. Resistance to hydrogen penetration or absorption.

The benefits you derive from these advantages are: Lighter enamel weights and coats... reduction of chippage and mechanical breakage losses... increase in production efficiency through reduction of rework and re-operation... sharply improved thermal shock resistance of white enamel, due to thinner enamel thickness... overall cost reduction for enameled ware... increase in production speed. Even when a ground coat is used this NEW Titanium Steel for Vitreous Enameling brings important manufacturing cost reductions.

Manufacturers of both steel and enameled products may obtain complete factual technical data from a member of our Technical Staff, or by mail. Consult your steel supplier on deliveries.

Pending patent applications on the new enameling process and product made thereby are owned jointly by Inland Steel Company and The Titanium Alloy Manufacturing Company under Trust Agreement.

THE TITANIUM ALLOY MANUFACTURING COMPANY

Executive Offices: 111 BROADWAY, NEW YORK, N. Y. *General Offices and Works:* NIAGARA FALLS, N. Y.

It's easy to modernize with SEAPORCEL

We think this pair of unretouched photographs shows better than the proverbial 10,000 words how you can use Seaporcel Porcelain Metal to add "walk-in" appeal to building facades.

Seaporcel is a ceramic coating, fused into its metal base at 1550°F. Available in an almost unlimited variety of colors, shapes, shades and finishes, it affords the architect infinite opportunities in creating store fronts, building facades, sign faces, quantity signs, architectural trim, etc.

Seaporcel, developed to withstand the grueling punishment of marine use, is easy to maintain—just wash with soap and water to reveal original color and finish.

Seaporcel can help you to design beautiful store fronts or building facades. Write for details—no obligation, of course.

There are a few areas in which Seaporcel Porcelain Metals, Inc. is not represented. Inquiries from interested agents are invited.

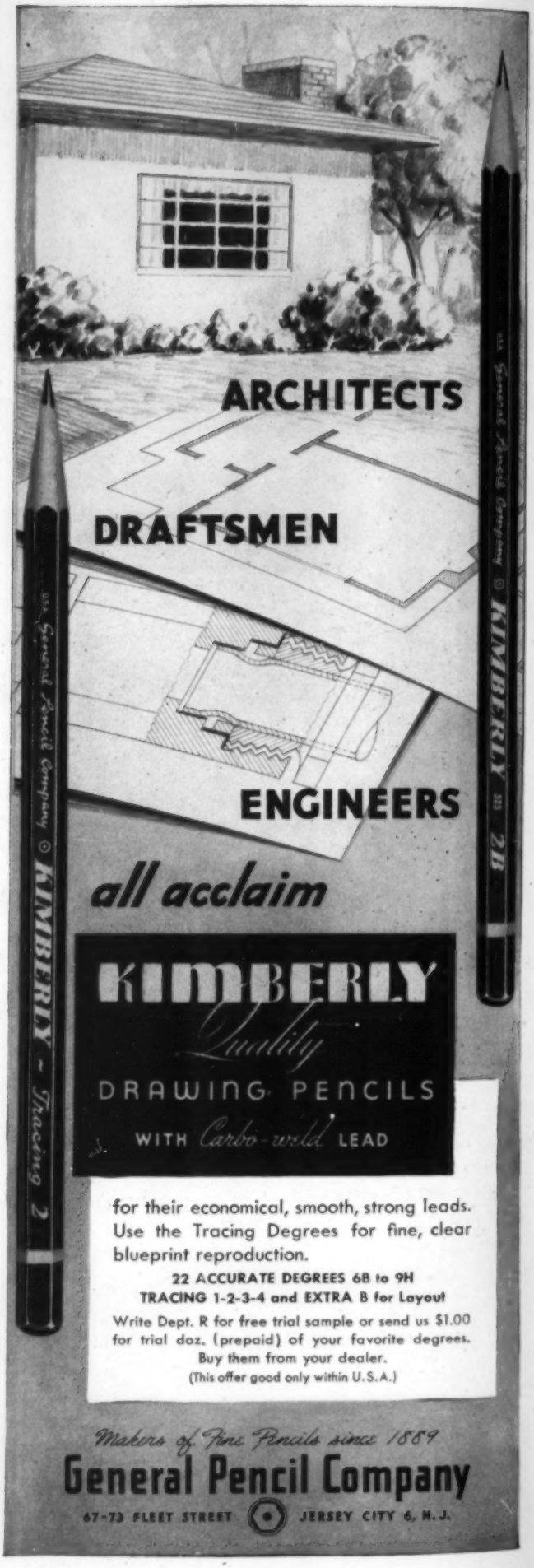
SP-7

Seaporcel Porcelain Metals, Inc.

Formerly Porcelain Metals, Inc.

28-00 **Borden Ave., Long Island City 1, N. Y.**

Seaporcel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WITH Carbo-weld LEAD
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Makers of Fine Pencils since 1889
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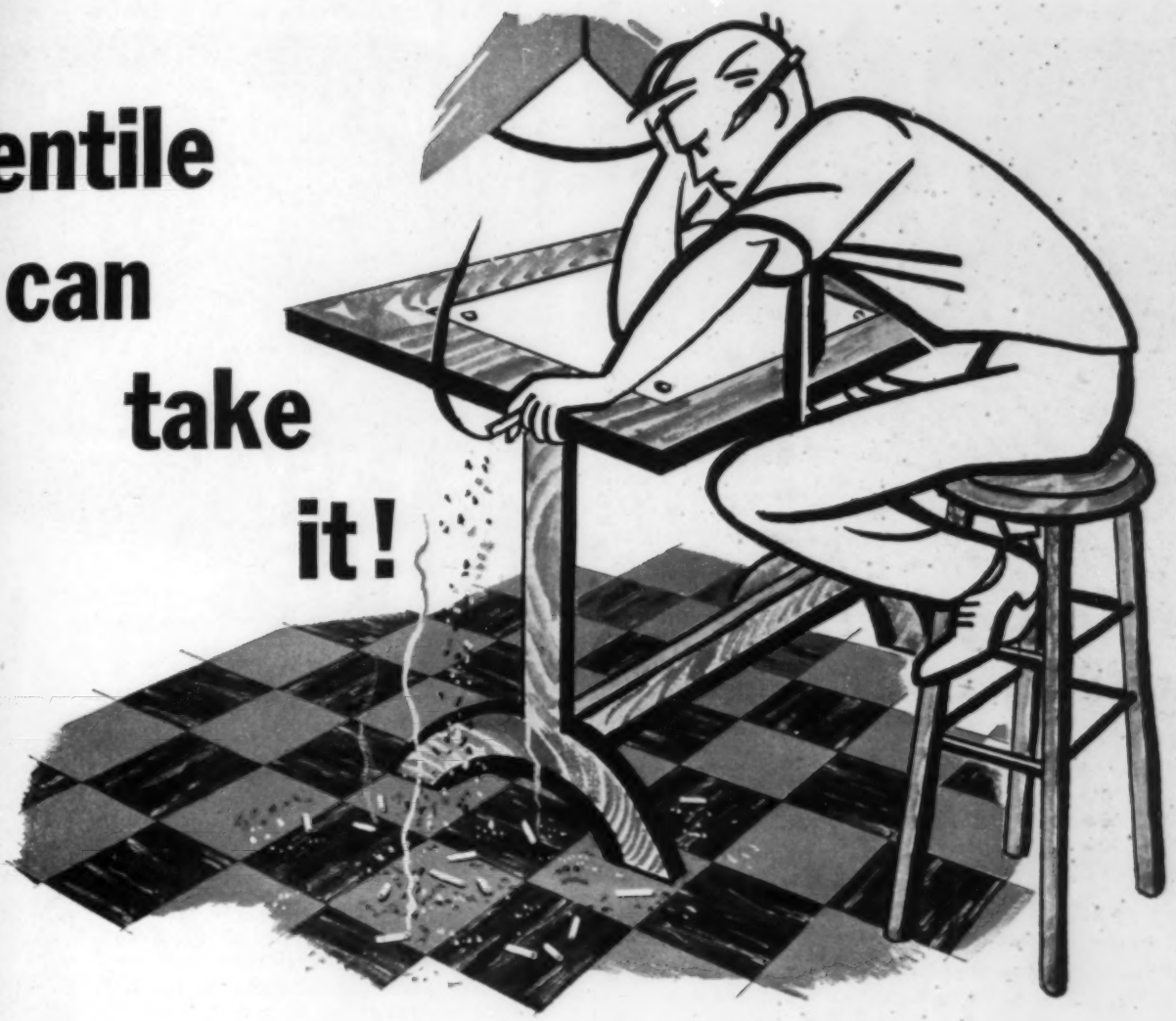
Kentile can take it!



Have you been sitting up nights looking for a floor that is really durable—as well as handsome, practical and economical? Relax—you've found it in Kentile.

DURABLE?

There isn't any material more durable than Kentile. For instance, it stands up under the terrific traffic of Rockefeller Center corridors, A. & P. and Woolworth stores and looks swell for years. Cigarette burns? They are rubbed right off by steel wool.

HANDSOME?

Kentile is set tile by tile, not in sheets. *You* create the pattern and color combination you want.

KENTILE Asphalt Tile Trade Mark Reg.

PRACTICAL?

Kentile is cleaned by simple mopping—it is so moisture and alkali proof you can use it on concrete below grade—it's resilient (quiet and comfortable)—it is slip-proof and fire-safe—it's altered anytime tile by tile.

ECONOMICAL?

Kentile not only will wear indefinitely and is inexpensive to maintain, it costs less! Want proof? Ask your local flooring contractor or write

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For Vaporsealing

Protects all kinds of insulation. Use on the warm side of insulation, leaving cold side free to breathe. Thus, ideal dry conditions will be maintained.

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Protects Flooring

One side crinkled BROWNSKIN, the other flat kraft. Between flooring, the BROWNSKIN side goes down. Also unexcelled as a protector of finished floor surfaces in rooms where men are working. Here the BROWNSKIN side goes up.

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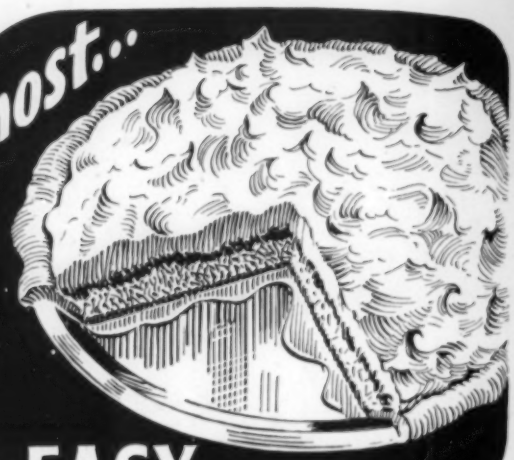
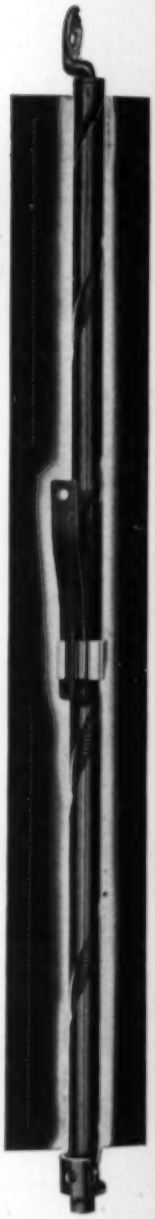


AS EASY AS PIE

to install

GRAND RAPIDS Invizible SASH BALANCE



Since its introduction to the trade in 1939 hundreds of thousands of Grand Rapids Invizible Sash Balances have been installed. Practical builders say that it is by far the easiest of all sash balances to install in addition to which may be added its advantages in efficiency, durability, ease of adjustment and the actual invisibility of the entire mechanism. These are some of the more important reasons for its popularity.

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This catalog contains complete information on sash balance sizes, directions for installing, etc. — all fully illustrated.

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Oildraulic Elevators will help you "keep within the budget" by making substantial savings in over-all building costs. Because the elevator car is pushed up from below—not pulled up from above—costly penthouses are eliminated, heavy load-bearing supporting columns in shaftway walls unnecessary. And no need for a special machine room with an Oildraulic Elevator . . . the compact electric hydraulic power unit can be located in any convenient space.

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This modern elevator (for freight or passenger service) is raised by a relatively simple hydraulic transmission system, powered by an electric oil pumping mechanism—so initial cost is low. Operating cost is low too . . . power used only when elevator rises, descent by gravity. And there's little maintenance expense, even after years of service, due to the simple mechanism and the operation of moving parts in a bath of oil.

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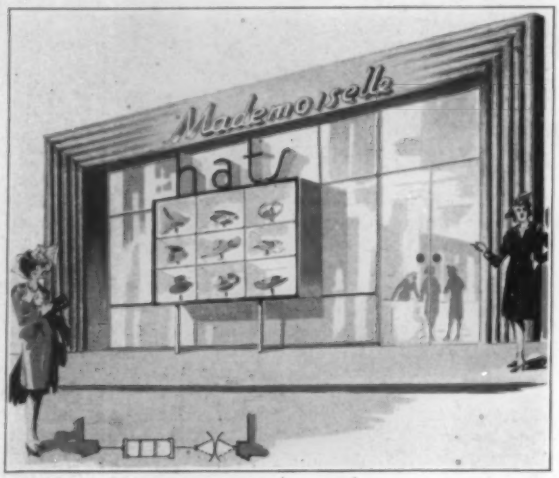

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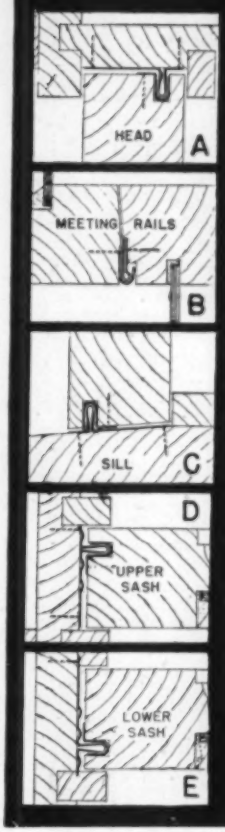

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1. Less infiltration of air.
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C. 12 Ga. No. 102P—1¾" wide
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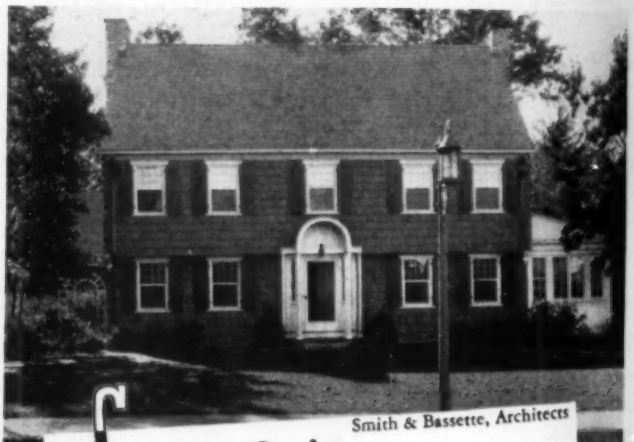

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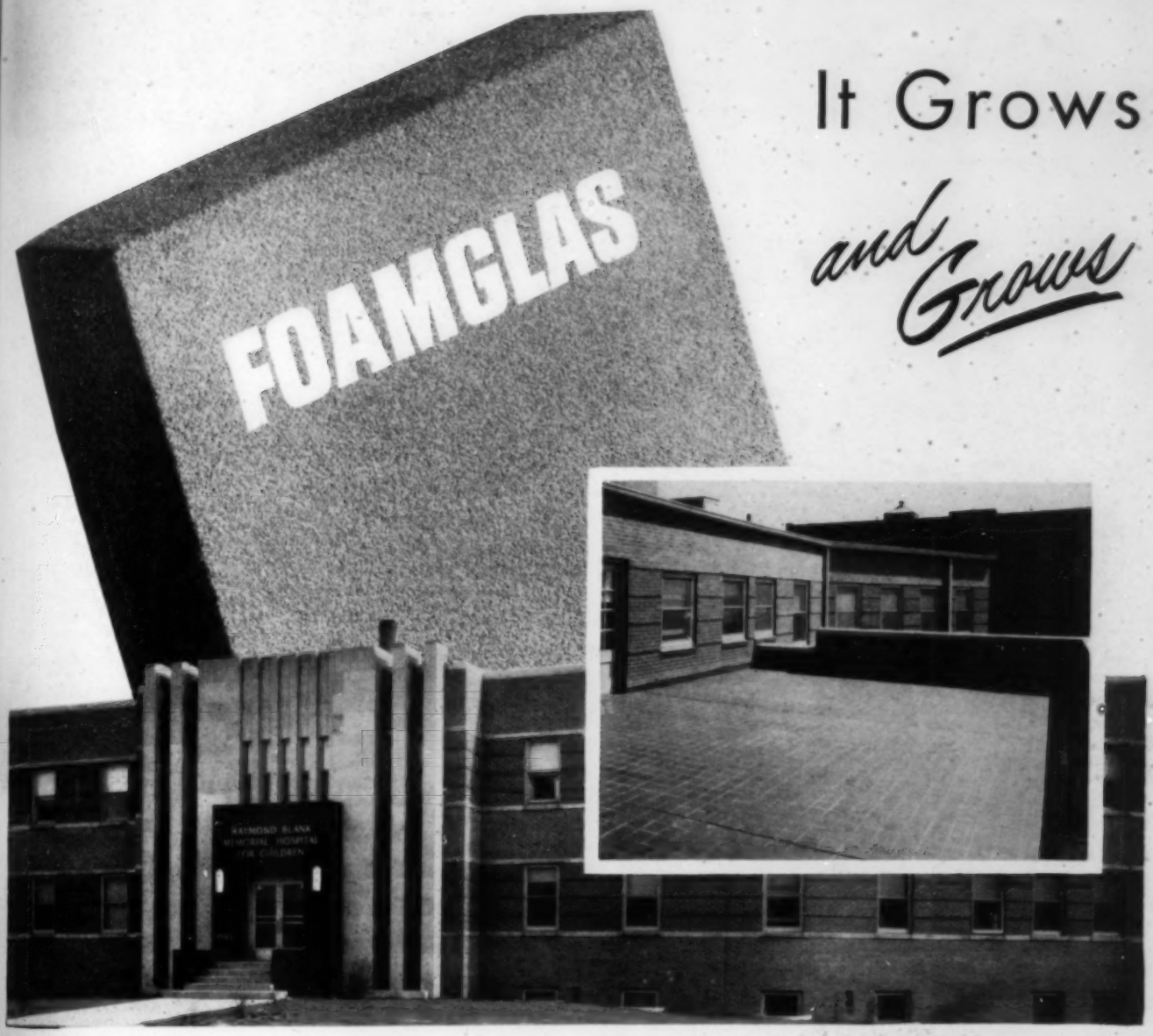

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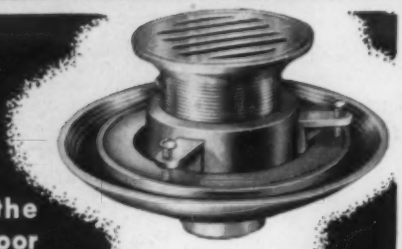
10 Reasons
for specifying the Series W-1100 floor and shower drain
by WADE



- Only sound, uniform, flawless castings are used.
- The Series W-1100, like all Wade products, represents the finest craftsmanship in machining and finishing.
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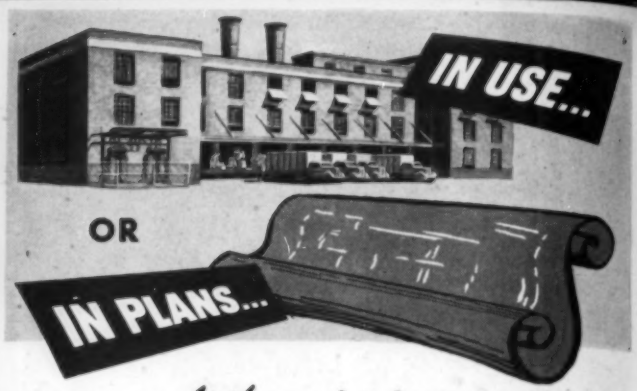

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Adequate Wiring includes not only conductors of ample size – but enough circuits and the kind of electrical system that can supply all the needs for power and lighting (both present and future) at the lowest cost per kilowatt used.

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"Eternal vigilance is the price of Liberty."

Do your part to keep Liberty's light burning. Are you vigilant at your cold storage doors?

Inefficient doors defeat Uncle Sam's plan of food conservation. Check your doors today.

JAMISON-BUILT DOORS cost no more . . . they'll pay you dividends for years to come.

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JAMISON COLD STORAGE DOOR COMPANY

Jamison, Stevenson and Victor Doors

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Jamison Metal Clad Door
Send for Bulletin No. 127

A typical example of how Jamison creates doors to meet all needs

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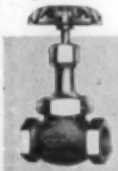
DON'T LET CHEAP VALVES TRIP YOU UP!

Specifying cheap, second-rate valves means trouble ahead for your clients, and reflects on your good judgment.

To make sure of long, trouble-free valve performance . . . to preserve and improve your reputation . . . never take chances on anything but top quality valves. Specify Jenkins Valves . . . made by valve specialists with over 80 years of valve manufacturing experience. Jenkins Bros., 80 White Street, New York 13, N. Y.



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For every industrial, engineering, marine and plumbing-heating service . . . In Bronze, Iron, Cast Steel and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

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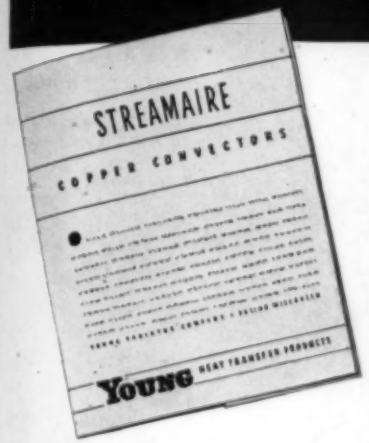
"Streamaire" Convectors
NOW STANDARDIZED IN 4 TYPES



Just off the press, this brand new folder..."Streamaire" copper convectors by Young ... has full information on capacity ratings, complete list of sizes of each style, easily read dimensional drawings and specifications. It can be had for the asking. Write today.

● Thousands of installation headaches will be avoided by architects, engineers, and contractors who wisely specify Young "Streamaire" Convectors in one of the four convenient standard types pictured at the right. They can be ordered directly from factory stocks which are being built up as rapidly as raw materials make it possible. These four designs have been scientifically engineered to satisfy a wide range of convector radiation requirements. Easy to order and easy to install, they can be depended upon to provide all of the warm comfort and even temperatures your customers expect. Young convectors are furnished with chain control dampers that make it easy to regulate flow of heat. Write for the pamphlet "Streamaire" Copper Convectors by Young and find out more about this conveniently standardized line of heating convectors.

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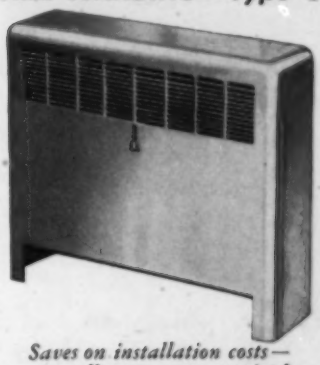
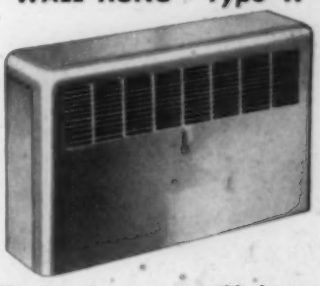


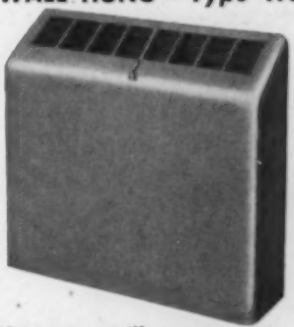
Saves on installation costs—no wall recesses are required.

WALL HUNG • Type W



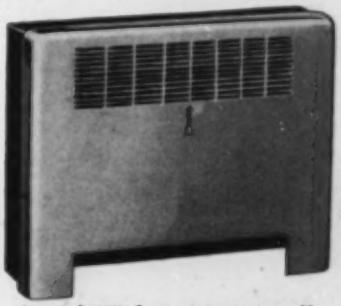
Heating elements accessible by easy removal of one piece front and top.

WALL HUNG • Type WS



Sloping top grille prevents careless blocking of air circulation.

PARTIALLY RECESSED • Type S



Special "Z" bars permit installation before or after plastering.

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YOUNG RADIATOR COMPANY
DEPT. 515-M • RACINE, WISCONSIN

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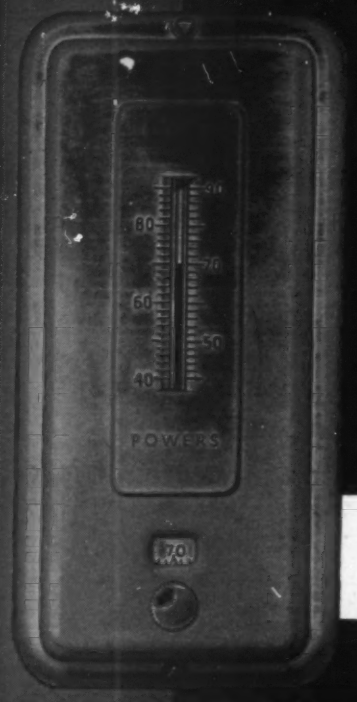

has been an outstanding feature of Powers regulation since 1891. With this type of control, valves or dampers are opened or closed **gradually,** which results in exceedingly close regulation and the maximum of comfort obtainable with automatic control.

● THE POWERS REGULATOR CO., 2752 Greenview Ave., Chicago—231 E. 46th St., New York. Offices in 47 Cities. 43

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Backed by 65 years experience we can assist you with your

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and Lockwood Hardware

The small home requires hardware selected with an eye to good design to add dignity, skillfull craftsmanship to guarantee security, in-built quality to give long service . . . and reasonable price to stay within the budget.

Lockwood Builders' Hardware meets these varied requirements. Specifying and using it insures a satisfied home owner.

"Finishing Hardware at a Glance" is contained in Sweet's Architectural File, 17bl, 1945.

AR-6

LOCKS? USE *Lockwood*

HARDWARE MFG. CO.

Division of Independent Lock Co.

FITCHBURG, MASSACHUSETTS

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THE POST-WAR

PRECISION-BUILT HOMES PROGRAM

is now ready

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- the contractor
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- the realtor
- the lending institution
- the insurance company
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Kindly write on your letterhead for the details—specifying your interest. Find out what has been accomplished through ten years of intensive research—originated by The Housing Division of Homasote Company and now continued by this corporation.

PRECISION-BUILT HOMES CORPORATION

TRENTON 3, NEW JERSEY

Petro Noted for Fuel and Labor Economy!

. . . THIS ARCHITECT FINDS

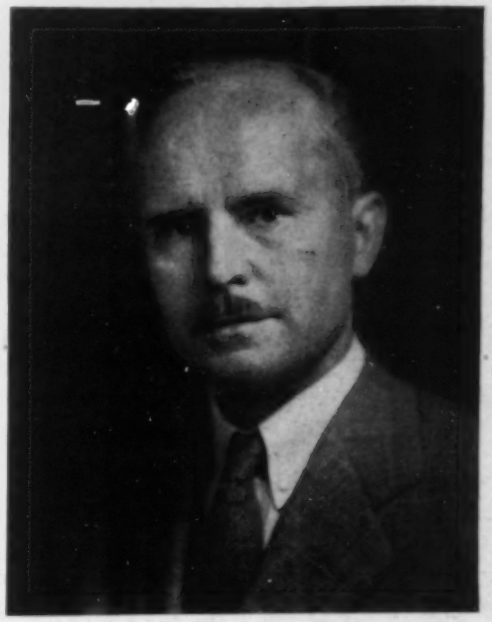
Because fuel and labor make up so large a part of the annual operating costs of building heating systems, the remarks of such a well-known industrial architect as Mr. J. Floyd Yewell are particularly significant. Listen to what he says:

> *"In my opinion, the economy of labor-saving and the simplicity of operation which have distinguished oil heating in our pre-war building are carrying on in post-war construction, when these attributes are even more in demand . . . I have found the Petro Oil Burning Systems possess an attractive record for fuel and labor economy together with long term service, and my experience is fortified by the advice of engineers."*

Many factors contribute to Petro economy. Of these none is more important than the Petro system for maintaining maximum combustion efficiency through precision control of heavy fuel oil viscosity.

Petro Thermal Viscosity Control closely controls the application of heat to the oil, so that the delivery to the burner is delayed until the predetermined ignition temperature is reached. No variations in temperature and hence viscosity of oil to the nozzle is thus permitted. Successfully employed for years in burning heavy fuel oil, Petro Thermal Viscosity Control is a performance-proven method that permits completely automatic operation and eliminates the need for frequent manual adjustments.

That Petro cuts steam costs is a fact!



J. Floyd Yewell, of New York, is well-known as an architect and an architectural renderer. Among his outstanding industrial jobs are the new plant for Walter Kidde & Company in Belleville, New Jersey; the New York, Susquehanna and Western Railroad Station in Paterson, New Jersey; and the plant for Ciba Pharmaceutical Products in Summit, New Jersey.

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FULL DATA on Petro Industrial Burners are in Sweet's, and Domestic Engineering catalog files. Details on Petro domestic burners available in separate catalog. Copy of either sent gladly on request.

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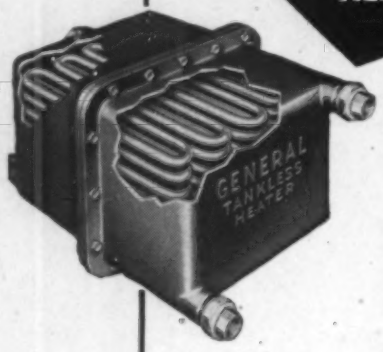

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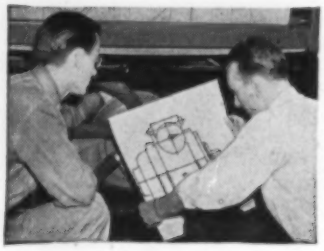

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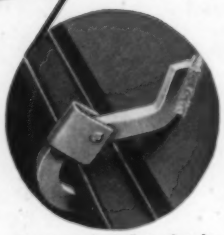

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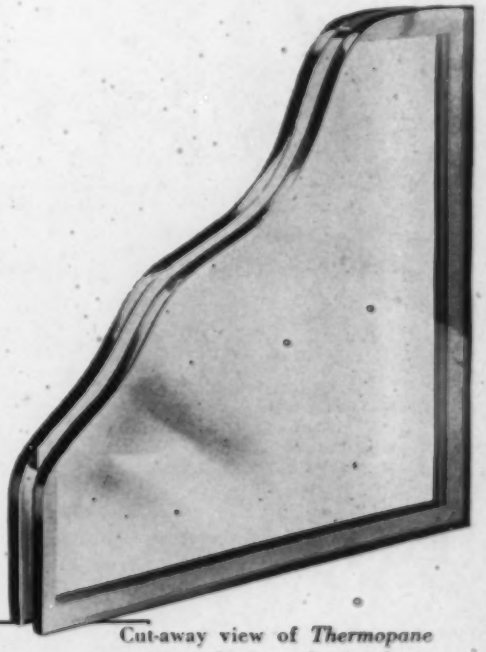

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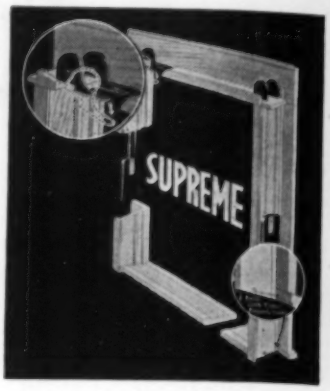

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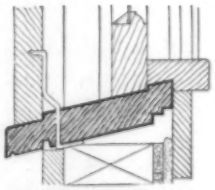
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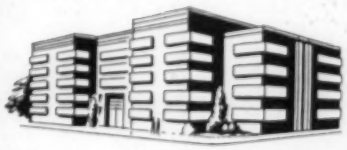

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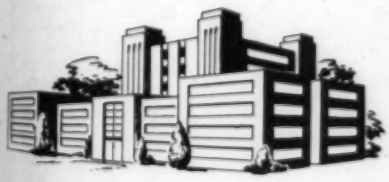

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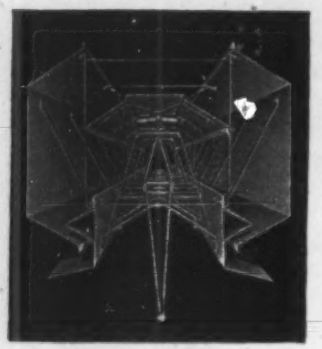

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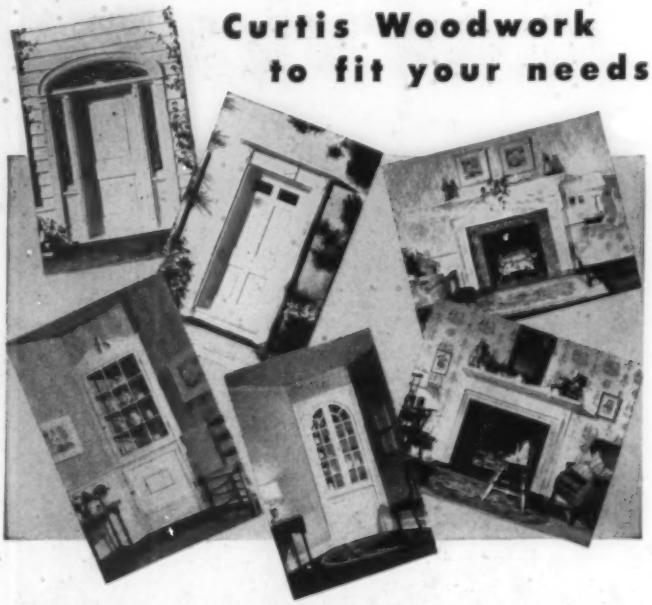

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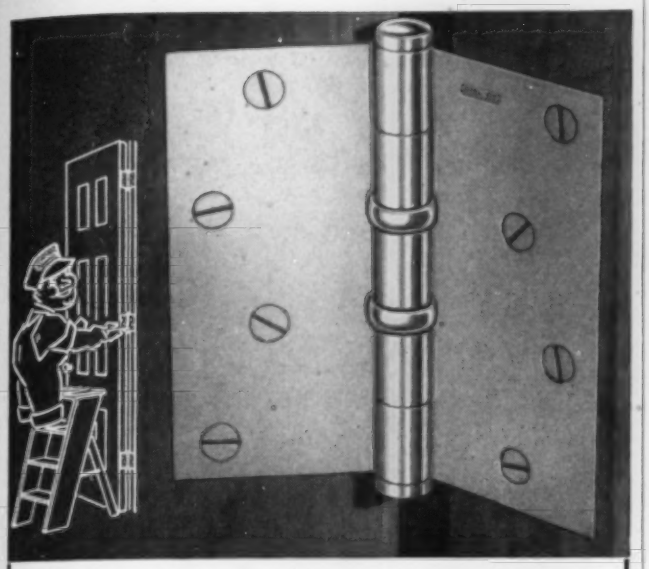

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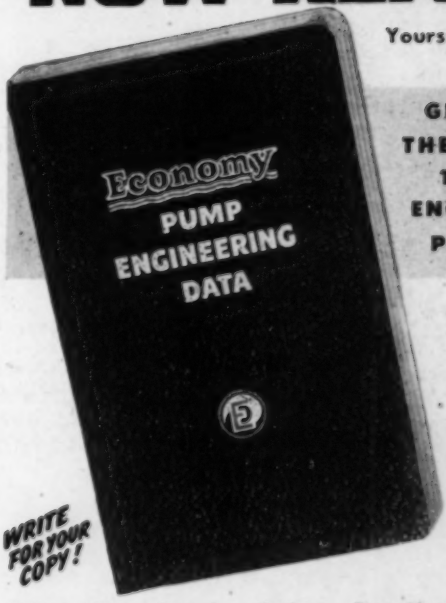

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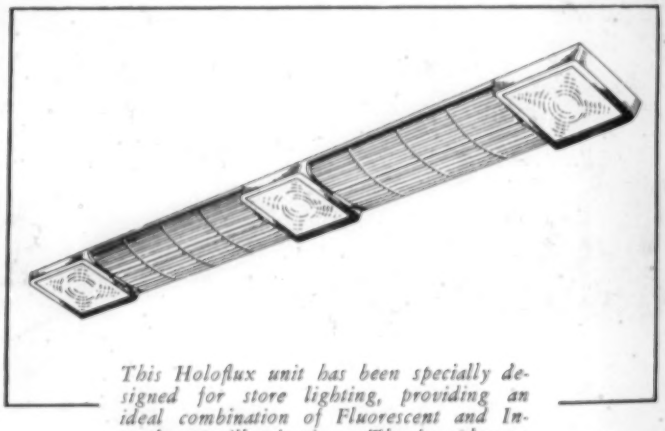

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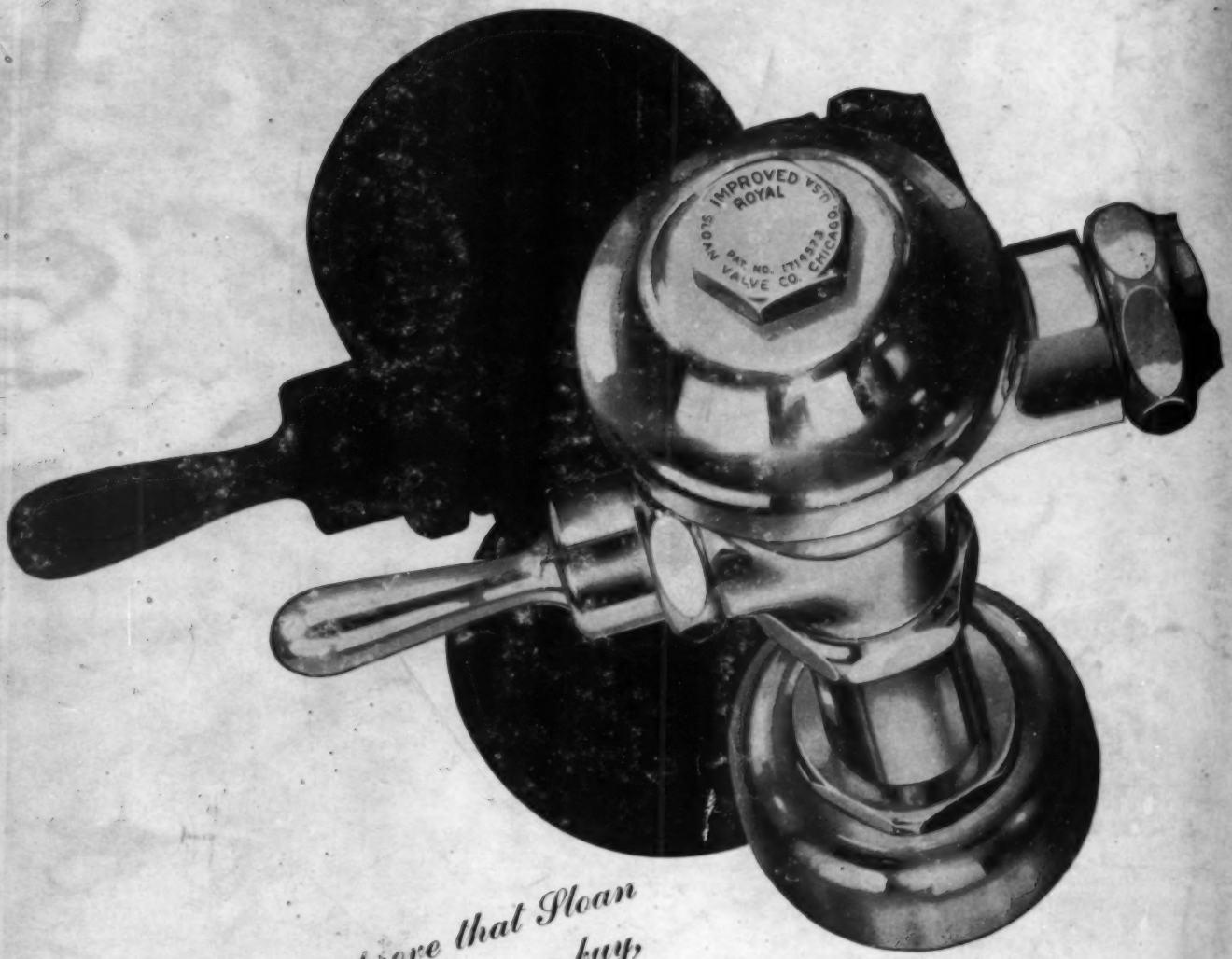
★ THIS SERIES IS BASED ON AN IDEA SUGGESTED IN LETTERS WRITTEN BY CPL. LOUIS A. PERKOVIC OF THE ARMY ENGINEERS IN THE SOUTH PACIFIC. AS THIS LONG-AWAITED PEACETIME HOLIDAY SEASON DRAWS NEAR, LET'S RESOLVE TO KEEP THE SPIRIT OF CHRISTMAS SHINING BRIGHTLY THE YEAR 'ROUND.



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